

TANDY LAPTOP COMPUTING

NOVEMBER 1989 -VOL. 6, NO. 9

TERRY KEPNER'S

portable 100

\$3.99/CAN \$4.95

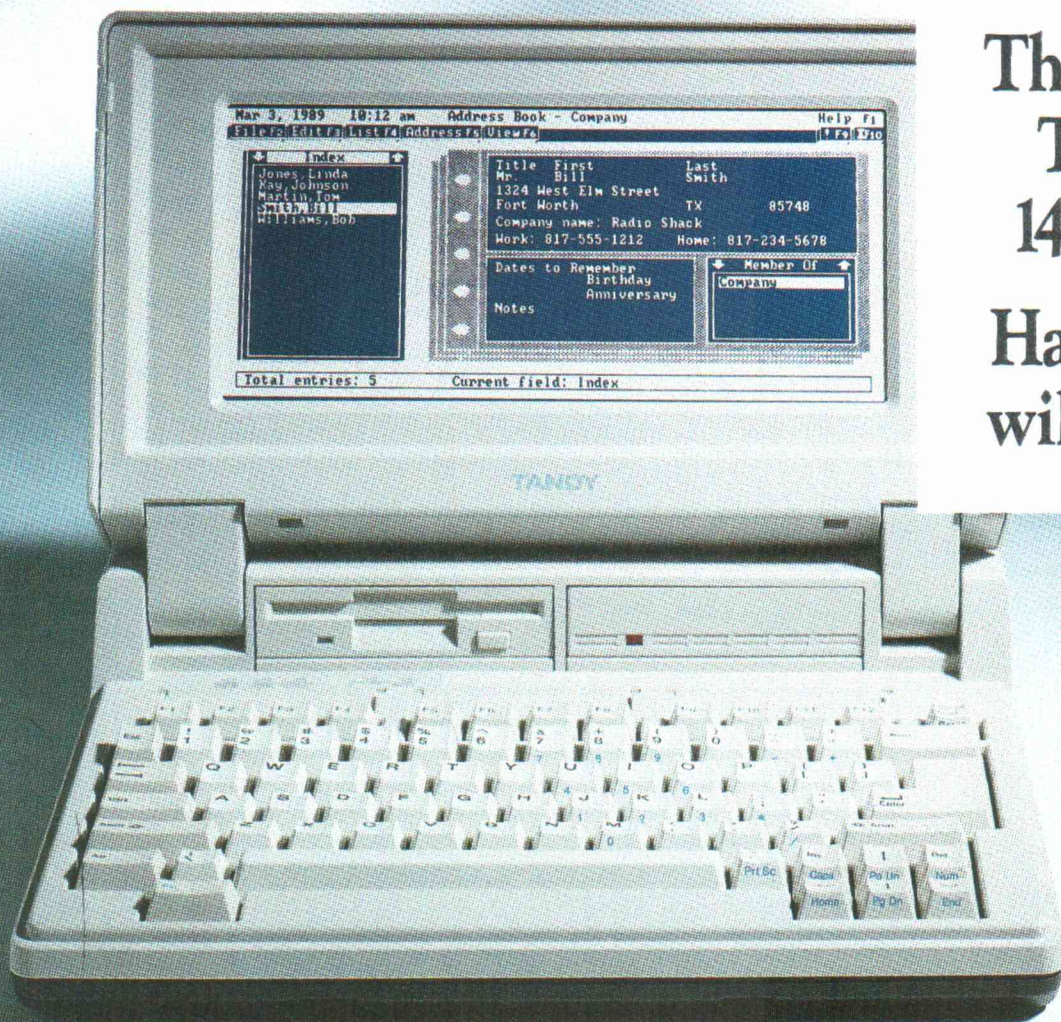
A MONTHLY PUBLICATION (EXCEPT COMBINED JULY/AUGUST ISSUE)

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pint-sized and powerful
word processor!*

TANDY PORTABLE WORDPROCESSOR WP-2



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The Tandy 1400 HD offers you the power of a desktop PC—in a package small enough to fit on an airline tray table. With its built-in 20MB hard disk drive, the 1400 HD lets you transport a library of software and data—without taking a deskload of materials along for the ride. Then there's the convenience of operation that only a hard drive can provide.



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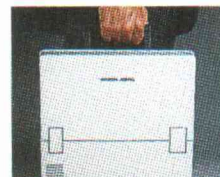
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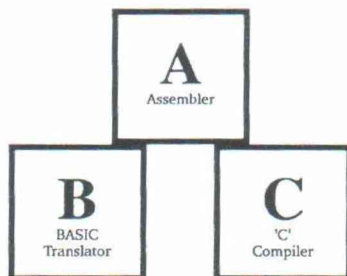
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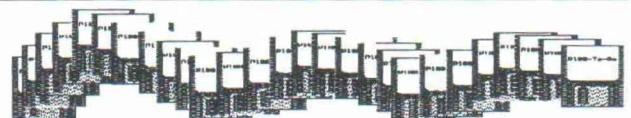
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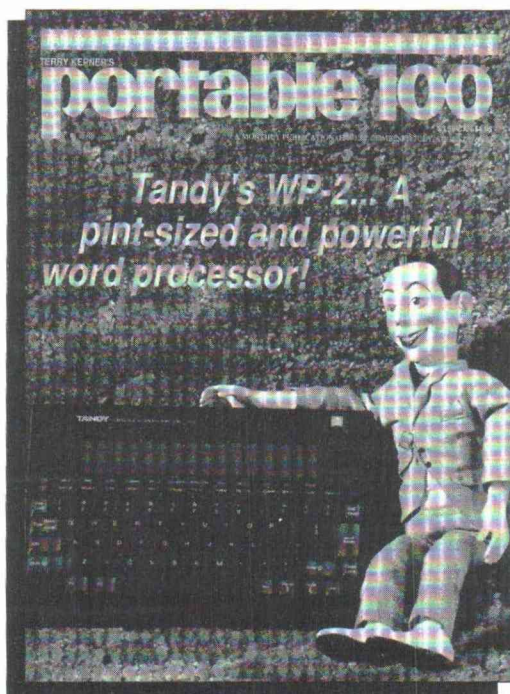
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ON
THE
COVER:

The new Tandy
WP-2 is small, light,
and efficient.

Photo by Bob Liddil.
Concept by Mike
Nugent. Pee-wee
Herman courtesy of
Curt Bessette.



Tandy 102



Tandy 200



Tandy 600



Tandy 1400LT

THE WP-2 PORTABLE WORD PROCESSOR

by Mike Nugent

Tandy's latest laptop isn't a Model 102 upgrade.

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by Mike Nugent

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ROM WITH A VIEW

It's happening!

Good news! The Tandy portable computer market is finally heating up. We're starting to hear from more people interested in selling Model 100 products. They're calling us with questions about how to get into the business of selling things they've designed or programs they've written. We're also hearing from third-party manufacturers with items for the Tandy 1400 portables. Plus, Tandy has just released *two* new computers for the laptop market: the WP-2 and the Tandy 1100FD.

All this activity is both a blessing and a curse. It means that we will soon have more advertisers in *Portable 100* (more advertisers means more money, which means more pages in the magazine). It also means that we must provide reviews of these products for our readers (Unfortunately we end up doing the reviews before the companies advertise, which means less room at first for applications and programs).

Hence this issue, which is almost entirely reviews. We have a review of the new WP-2 from Tandy. This looks like a real hot little number, with most Tandy stores claiming to have already sold out of their initial allotments, with waiting lists of at least three or four buyers. We also have a review of the new PHD serial hard disk drive from Weltec. This baby lets you connect up via your RS-232C port (while the software is MS-DOS, there is the possibility that some smart programmer could adapt it to the Tandy 100/200 line).

We also have reviews of *FAST* from Mel Zwillenberg and the *Portable Communicator* from Club 100. Two good pieces of software from readers who have decided to try their hand at selling products.

In the next few issues look for more reviews and more new products as other companies either start up or re-enter the market.

Starting next month we'll be producing *Portable 100* entirely on the Tandy 4000, printing it out on the Tandy LP-1000! That's right, using only hardware and software available through Tandy stores, we'll be able to duplicate everything that the Macintosh used to do. All that is due to the new Pagestyler board from Destiny Technology Corp. (300 Montague Expressway, #150, Milpitas, CA 95035 (408) 262-9400). This board and software turn the LP-1000 (a Hewlett-Packard-based Laserjet Plus) into a full featured PostScript printer (all 35 fonts). It can even print the encapsulated PostScript files that used to choke up the LP-1000! Considering that we already have the Tandy equipment, the added cost of the Destiny Pagestyler is a bargain.

We think you'll enjoy the improvements that will result from this new, streamlined approach.

Well, that's all we have room for right now, so see you next month.

Terry Kepner

Toolbox

Manuscripts were typed into Microsoft Word 3.0 on a Tandy 1400 LT, where they were edited, spell-checked, and had basic format instructions inserted. From there they were loaded into a Tandy 4000 (80386 CPU, Tandy EGA Monitor, Tandy LP-1000 LaserPrinter) desktop computer and placed into Aldus' IBM PageMaker 2.0a. There they were put into a rough approximation of the magazine's final appearance. Here, pull quotes are placed, headlines, intros, and bylines are sized and positioned, and advertisements positioned.

Next, the magazine was ported over to our Art Director's Macintosh II, using the 1400 LT and

Mac-link. She then went over the publication using Aldus Macintosh PageMaker 3.01, making final design decisions on photo, figure, and listing sizes and placements. She precisely placed the text and added all the little things that go into making a nice looking publication.

Page previews were output from her Laserprinter. When everyone was satisfied with the appearance, the Macintosh disk was sent to Colorite Corp. in Wisconsin for final output directly onto photographic paper. The finished magazine was then delivered to the printer, who printed it, labeled it, and mailed it to you.

portable 100

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POSTMASTER: Send address changes to:
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FISHING FOR A SARDINE

When I received my April issue of *Portable 100* I read the article entitled "Sardine Reviewed." This article piqued my interest in buying the software. An advertisement on page 18 offered the *Sardine* ROM for a sale price of \$99.95. I called Traveling Software and was told that they do not make this product any longer. I was told that the advertisement was not supposed to be published in the magazine any longer.

Last week, I received the May 1989 issue of *Portable 100*. This issue contained the column entitled THE IDEA BOX, where the author speaks highly of the *Sardine* and how it has expanded his writing capability. Again the advertisement appeared, offering the same sale price of \$99.95.

The primary function of my Model 200 is report writing. This software would enhance my Model 200 greatly. I am very interested in purchasing this product. I have considered upgrading to a larger laptop; however, I would keep my 200 if I can expand it. Can you find out where I can purchase this product?

Alicia E. Goodsby
21356 S. Avalon Blvd.
Carson, CA 90745

Unfortunately, Traveling Software never communicated any intent to withdraw the advertisements. We just followed their instructions and ran them. Sorry you were misinformed.

There may be several ways to acquire a *Sardine* for your Tandy 200. First, I've printed your address in hopes that someone wanting to part with theirs will contact you. In addition, Ultrasoft Innovations' catalog lists many things they don't advertise here, among which is the *Sardine*. They may still have some available. And failing that, perhaps a classified ad in *Portable 100* will net you a *Sardine* (bad pun—sorry!).

-MN

HELP FOR SUSAN

In response to Susan Askew's letter in

the May issue, bemoaning the difficulty she has had with her Model 100 and the peripherals purchased from Traveling Software, please suggest to her that, instead of writing to the company with her problems, she telephone TS's customer support department (206-483-8088) and let them answer her questions directly, authoritatively and, I am sure she will find, courteously. This, at any rate, has been my experience, as I, too, have been occasionally baffled by the instructions in the manuals and been obliged to seek clarification at the source.

Also tell Ms. Askew not to lose faith in *Ultimate ROM II*. It has transformed my 100 into as sophisticated a laptop as I shall ever need or want, and allowed me to

I called Traveling Software and was told that they do not make this product any longer.

record my impressions of people and places throughout the civilized and frequently uncivilized world. And now, with TS's magical *MacDOS II* cable, I'm able to transfer these notes to my more sedentary Mac II when I get home and print it all out on a Laserwriter.

David Parry
Los Angeles, CA

I'm surprised to read in the May 1989 issue that Susan E. Askew has had trouble with her *Ultimate ROM II* and *Booster Pak*. I use them both on my M102 along with the 4-chip version of *Sardine*

and find that they are excellent—versatile, lightweight, marvelous. Admittedly, the Traveling Software documentation is sometimes difficult to understand, but if I read it over a few times, I can usually work out any problem.

My experience has been that Traveling Software is quite cooperative in lending help, but the best way to obtain that help is by telephoning them, asking to speak to the person who gives technical support for *Ultimate ROM II* and *Booster Pak*. It will cost a telephone call, but it's well worth it.

Thank you so much for printing Larry Lavins' marvelous article on print codes.

I wouldn't trade my M102 for any of the heavyweights, and I eagerly look forward to each issue of *Portable 100*.

James L. Lowe
Norwood, PA

ONE MORE TIME

I was sitting out on the porch, reading what little there is to read in *Portable 100*, and I think that it's time to be heard. I think Mr. Garry Jeppesen (INPUT/OUTPUT, Summer '89) has, as I have, to wonder where this magazine is going. I think you evidently missed the point, or Mr. Jeppesen didn't get the point over to you that this magazine is either going to have to have more articles in it, or the price should come down!!!

I just finished, also, a copy of *Rainbow Magazine*, which is written for the Tandy Color Computer and has 132 pages, as opposed to your less than 30 pages for the same price! Now there seems to be a definite difference here, and I think that most of your readers will agree that there ought to be some changes made some place. If you don't believe me, then maybe we need a vote?

Don't get me wrong; I didn't write this letter to upset you, I just don't think we are getting a fair shake for the money. I have been getting *Portable 100* since July of 1984, and for a magazine that is going to cover July, August, and September, or

whatever, then that's the s-k-i-n-n-i-e-s-t [darn] magazine that I believe I have ever seen.

I'm afraid that if it continues as is, then my subscription is at an end. There is simply not four dollars' worth of information in a magazine that covers three months and only 28 pages.

Gerrald L. Bales

Apparently, I've somehow failed to make this clear in the past: Subscription income barely covers handling and mailing costs—nothing more. The major costs of a magazine are supported by advertising!

Total up the ads in a 132-page magazine, and chances are, they alone would make up a magazine the size of Portable 100. The basic rule is this: The more advertising, the bigger the magazine. It's that simple.

One extreme is the "controlled circulation" magazine, where subscriptions are free and the magazine is entirely supported by advertising. The other extreme, the newsletter, carries no advertising and survives by charging very high subscription prices. Most magazines fall somewhere in between. Traveling Software's absence cost us a few pages. As we add new advertisers, we can replace the missing pages and perhaps add even more.

Another clarification: We publish eleven issues per year. Therefore, the Summer issue (usually called "July/August") is not intended as a double-issue. Having published only ten issues this year, we tacked "September" onto the issue's name (to put cover dates back on schedule) and extended subscriptions by one month. As I've said before, it's just a "name game." You get every issue you pay for, and the information is always fresh. We use smaller type and far less blank space than other magazines, to fit as much information as possible into whatever number of pages our current ad revenues provide.

If you know of another publication of any size that provides more information on Tandy laptop computing, please let me know. I'd like to subscribe.

-MN

Z88 BASHING

It is very difficult for me to believe that Cambridge has gone out of their way to be mean and nasty to Tandy so why, oh true believers, does it seem so many "Tandyites" are being upset over the Z88?

I am speaking specifically about the article by Daniel Grotta ("Z88 to Model 100," April '89). Now Mr. Grotta for this article has either (a) gotten hold of a bad

machine AND bad peripherals, (b) just does not like Cambridge, or finally, (c) is misleading us or is being misled himself!

The article cited the Z88 as having a "monumentally screwed-up word processor" and being unable to use a power transformer because "none is available and technical specifications seem to be a state secret." The most heinous crime in all of this is the usage and comparison of the Z88 and Mr. Grotta's perception of it as a "Dantean nightmare."

Now hold on here! I wrote—and still write—plenty of letters on the Z88, and formatting them is a snap! Spreadsheets are certainly capable for more than "quick and dirty" work, as Mr. Grotta feels. I have the mysterious (missing?) transformer. The technical specs *did* take time to get out but are available now and, according to advertisements, were available at the time of the article. I am all for anyone speaking their mind on the various machines out there, but let's not allow a perspective to become an untruth!

Several things mentioned in the article are just not so. I quote from the article

Does this look scrambled to anyone out there?

again: "The special printing cable that converts from serial to parallel (the Z88's one and only port) scrambles every tenth character ..." Huh?! Does this look scrambled to anyone out there?

Now let me note here that Mr. Grotta does have legitimate gripes, a touchy keyboard (the price for silence!), a useless help menu within the Z88, but, as a comparison, the Z88 has at least as much on the ball as the Tandy.

Whoa again! Now, I still love my Tandy. Its dependability and flat-out usefulness are legendary, and deservedly so. But does that mean that we can't accept a new machine that most certainly owes, by heritage, a great deal to the 100? In my book, both machines deserve equal billing as machines that do what notebook 'puters

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Low cost hardware which plugs into system bus.

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Circle 88 on reader service card.

should do—make the user more powerful by its use. (Note here, folks, that this doesn't mean the machine itself has to be powerful!) I believe there's room to appreciate both machines. Where the Z88 saves on size and weight, it *could* be sacrificing in ruggedness. Where the 102 has a built-in modem for communications, the Z88 does not, but it does have a fairly complete set of programs *built in* that are much more of a finished product than the 102's. Hey guys, the list goes on and on. For every plus there's a minus, and for all their differences, there's a similarity.

In closing, I am all for anyone, myself or Mr. Grotta, being able to air our views, but when those views transgress into what just ain't so, then it's time for someone to draw the line. 'Cause if we don't, boys and girls, we have a "Dantean nightmare" all our own!

John L. Webb
Atlanta, GA

TOLL FREE BBS

In answer to Garry Jeppesen's question in "What's in A Name?" (INPUT/OUTPUT, Summer '89), yes, Garry, there is a toll free BBS. It is called NYCENET, and it serves many computer types, such as the Model 100, for which I manage a section under the title of *Business*. Just type 16J and look for *Portables*. The number is 1-800-344-8280.

Mike Holman
Hollis, NY

Model 102 for the Defense

As I've mentioned before, I live in Oregon (The Pollen State). There are many reasons to live here. For one, the weather. I happen to like rain. A lot. Which is good, because from October to June it's possible to commit suicide in Oregon simply by going outside, tilting your head back, and opening your mouth wide.

I also like the Cascade Mountains, the Columbia Gorge, and the Pacific Ocean. However, I do NOT like the urban highway system.

Oregon's highway system was laid out by the founders of the Zero Population Growth movement. It's actually fairly easy to travel once you learn the secret: *Never try to go anywhere anybody else wants to go at the same time they want to go there.* If that's too complicated, just remember the thumbnail version: Never try to go anywhere.

A couple of months ago, I was reminded of the futility of trying to violate that rule. I was on my way to Vancouver, Washington, to the computer store where I work part time. Although Portland and Vancouver are separated by the Columbia River, they are essentially both part of the same metropolitan area, Vancouver being another of Portland's many suburbs.

Only eight miles separate my house from the computer store. From my house, I have three easy ways to get to work: Take the I-5 bridge; go 12 miles out of my way to take the I-205 bridge; or hijack an airliner at gunpoint. Since I have the memory of a toaster, I usually forget about my other options and take the I-5 bridge, which has been under "temporary improvement construction" since 1957.

Now, around Portland we used to have a problem on our freeways. During rush hours (from 4 A.M. till midnight) the average speed was around 5 mpd (miles per day). So a couple of years ago the city fathers—Larry, Moe, and Curley—came

up with a brilliant solution. Ramp metering. This works like so: Put traffic signals, timed to allow only one car every 10 seconds, at every freeway access ramp. That's right—make people wait in line to get on the freeway, where they can wait in line some more. The theory is, if they have to wait long enough at a dead stop, they'll be so grateful finally to get on the freeway that, in gratitude, they'll rush to the closest voting booth and try and raise their own property taxes. Anyway, the program has been a huge success, raising the average freeway speed to a blistering 7 mpd.

**Never try to go
anywhere anybody
else wants to go at
the same time they
want to go there.**

Right next to each metered access lane is a big, wide, beautiful, empty UN-metered access lane, built there by the same kind of people who build pizza parlors next to diet centers. You're allowed to use these un-metered lanes if (A) you're driving a bus, (B) you're driving an authorized emergency vehicle, or (C) you're driving Leona Helmsley to a hair appointment.

So there I was in the metered access lane, re-reading *War and Peace*, microwaving some popcorn and waiting for

my turn at the giddy experience of driving almost as fast as Orson Welles could jog, when my car (a 1975 Dodge Dart that I affectionately call "Mi Pilo Del Crapo") suddenly began to have problems.

Five minutes later, I was presented with a \$39 traffic ticket for Illegal Lane Usage. I was also presented with an opportunity to use my Model 102 to strike a blow for justice.

When I got to work, I examined the ticket. Printed in microtype on the back were the following options available to me: (A) send in the \$39 and be thankful I wasn't arrested for driving something so ugly in the first place; (B) appear in person in traffic court in downtown Portland (where I could trade in my Illegal Lane Usage ticket for two Illegal Parking tickets) and spend the entire day in a huge room full of other people too dumb to take Option A; or (C) send in my \$39 along with a letter of explanation, which the court would consider seriously and carefully before wadding it up and donating it to one of the city's many landfills.

Ever the optimist, I decided to try Option C. It was a slow night at work, I had a full head of steam, and I had a secret weapon: The Portable Office.

I know myself fairly well. I'm a procrastinator. If I hadn't had the Model 102 with me right then and there, my letter to the court wouldn't have been written. On that day, I didn't get off work until 8 P.M. By the time I got home at 8:30, had a late dinner, and taken care of the day's regular and electronic mail and a few other things, it would have been too late to write the letter. By the next day, I would have had other, more immediate things to deal with, so I would put it off until the weekend. When the weekend came around, I'd have to do a few other things first ...

But, since I had the M102 with me, I cranked out the following letter, reproduced here (honestly) word for word:

BACK ISSUES NEW ARTICLE INDEX!

With over 60 issues, and hundreds of articles, *Portable 100* is THE source for information, programs, and applications for your Tandy Portable Computer. But how do you find what you need among all those issues? The answer is the **newly updated Portable 100 Article Index**. Covering every issue from September 1983 to the combined summer 1989 issue, the index is designed to make it simple for you to find what you need. And at a cost of only \$9.00 (postage and handling included), you should buy one today! If you have last year's index, don't despair. Update your index by adding our special 1988-1989 Update Index. It's a bargain at just \$4 (P&H included).

And what do you do when you find an article you want? Easy. First check the back issue chart below for back issue availability. If the issue is available, just order it using the handy order form (\$5.00 each, postage and handling included). If it isn't, don't despair. Photocopies of any article cost just \$1.75 each. Simply list the article, or articles, by title, author, and issue, enclose payment, and in just a short time you'll have the articles in hand.

Month	83	84	85	86	87	88	89
January			Not Published				
February							
March			OUT		Not Published		
April		OUT					
May		OUT				OUT	
June		OUT					
July		OUT		OUT		combined July/August	combined July/August & Sept. (Summer 1989)
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September	Premier Issue						
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A brief explanation: I was heading toward I-5 North when my car began lugging and finally stalled. I coasted into the ONLY empty lane, the Bus Only lane and, a couple of minutes later, got the car started again.

By this time, traffic in the metered access lane was backed up by about twelve thousand cars and my attempts to get back into line were met with displays of firearms or drivers slooowwwly drawing their index fingers across their throats.

Just then I noticed a bus bearing down on me, the driver obviously anxious to solve the old "unstoppable force/immovable object" question. I decided to just drive on.

If a hoard of terrorists decided to drag me from my car and burn me in protest of American foreign policy, my ashes would be cooling

before help arrived. But since I was using the wrong lane, there was, of course, a patrol car handy.

I pulled over, then watched in my rear view mirror. The officers slid up along either side of my car, stopping well behind me, gun hands vibrating scant millimeters from their 9mm automatics. At this point, I abandoned all thoughts of explanations, deciding instead to limit my responses to a polite "Yes, Officer/No, Officer/I have a family, please don't shoot, Officer."

And so here we are. I throw myself on your mercy and do solemnly vow that, should similar circumstances ever befall me again, I will calmly get out of my car, face the sunset, and begin walking away, never looking back. Thank you for your attention,

Michael Daigle

Next, I took the M102 over and plugged it into one of the store's display

printers, which dutifully kicked out a letter quality printout. From the Portable Office bag, I extracted an envelope, a stamp, and a check. On my way home, I dropped off the finished product in a mailbox.

Well, the wheels of Justice grind slowly indeed, jammed up as they are with the bones of jaywalkers, unlicensed mimes, and Illegal Lane Users, but just last week, I finally got a reply from the court. Inside the envelope were two items: a letter from the judge that said, "I am finding you guilty but imposing no penalty" and, lo and behold, a check for \$39!

Is this a great country or what?

by Michael Daigle



The WP-2 Portable Wordprocessor

Here's a look at Tandy's latest.

by Mike Nugent

Tough as it was, I finally managed to acquire a WP-2 Portable Wordprocessor, Tandy's newest notebook machine, so I could put it through its paces and give you an early look. In an unusual move, Tandy is launching this product on sale. Normally \$349.95, it's on sale now for \$299.95. Good—I can certainly use the savings!

The WP-2 is even smaller than the Tandy 102—same length and width, but only an inch thick—and weighs just under 2.5 pounds. Powered by four AA NiCd or alkaline cells (or optional AC adapter), it features an 80-column by 8-line LCD screen, 62-key sculptured keyboard, 32K of internal RAM (to which you can add another 32K), and a slot on the side for 32K RAM and ROM cards. The soft travel pouch provided has two pockets inside to hold such cards. Built-in software on its 256K ROM performs text editing, formatting, telecommunications, and interface to data storage devices (cassette, RAM disk, RAM card, portable disk drive). In addition, it contains a 200,000-word thesaurus, 100,000-word spell checker, appointment calendar, and telephone directory with autodialer (using an external modem).

FIRST IMPRESSIONS

This is a good looking machine with a nice solid feel. The matte black contoured case, and the black and dark gray sculptured keys, lend it a handsome appearance suitable for work in a business environment. You won't be ejected from the boardroom for carrying a WP-2.

As for the keyboard, I could type on this one all day long. The action feels similar to that of the Model 100 family, but tighter and more firm, and the contours are just right for my fingers. It's fairly quiet, unburdened by "tactile feedback," or whatever they call the clickety-click that drives me crazy on the 1400 FD.

The WP-2 incorporates many Model

100-like features. Cursor movement via *Shift*, *Control*, and arrow key combinations, for example, is identical. Key placement is remarkably similar, with only minor exceptions, one of them being that the arrow keys are now on the bottom right-hand side of the keyboard, where the M100's *CODE* and *NUM* would be.

On the bottom left, where the M100's *GRPH* key was, are two function keys labeled, not surprisingly, *F1* and *F2*. Used in conjunction with the top row of keys (the numbers 1-9 and 0, plus -, =, \, and *Del/Bksp*), these give the user 26 main function key combinations. Two rows of labels below the LCD screen indicate the functions, the top row showing functions

**This is a good
looking machine
with a nice
solid feel.**

performed when *F1* is pressed, and the bottom row showing those for *F2*.

F1 main functions are *HELP*, *FIND*, *QUICK*, *FORMAT*, *STYLE*, *SPELLWORD*, *SYNONYM*, *DIAL*, *SELECT*, *COPY*, *CUT*, and *PASTE*. *F2* main functions are *STATUS*, *REPLACE*, *SORT*, *LAYOUT*, *PRINT*, *SPELLDOC*, *RUN*, *PHONE*, *TELCOM*, *CALENDAR*, *SETUP*, *FILES*, *INS/OVR*, and *EXIT*.

ACCELERATORS AND HELP

Aside from the 26 main function keys,

the applications have additional subfunctions. In fact, most anything you need to do on the WP-2 can usually be done using function keys. For example, to center a line while editing a text file, place the cursor somewhere on the line and press *F1-C*. *F1-M* sets the left margin for a desired portion of text. *F2-P* repaginates the text, showing where page breaks occur. And so on. These function keys (called accelerator keys in the manual) are the fastest way to do things.

When you can't remember the appropriate accelerator key, call for *HELP* (*F1-1*). Context-sensitive help is available throughout the WP-2 in the form of—you guessed it—a window. The window shows available subfunctions, each preceded by the accelerator keys used to invoke it. Just press the appropriate accelerator keys.

Alternatively, you could use the arrow keys to highlight the desired command, and then press *Enter*. At times that might be more convenient, say, when working one-handed, but otherwise I prefer the quick accelerator keys.

FROM THE TOP

With so many overlapping topics, it's difficult to know where to start. Let's try taking it from the beginning—the brand new, unexpanded 32K machine.

When you first initialize a WP-2, three copyright notices appear, and you're prompted for a file name for your first file. (You cannot have an "empty" machine, and there's no main menu as on a Model 100.)

Permissible file names are up to eight characters long, composed of any non-graphic characters, and can include punctuation, plus and minus signs, spaces (as long as the first character isn't a space), and more. The WP-2 automatically adds a two-character *.DO* extension. Thus, *!@#%^&*.DO*, *1234 567.DO*, and even *DOGGY.DO.DO* are legal file

names. Let's say you type in *DUMMY* (no extension) and press *Enter*.

Having created *DUMMY.DO*, you're presented with a status screen, with a "ruler" line across the top showing the line width (default 65) delineated by left and right brackets, a dash for each column, and the letter *T* marking tab stops. A window on the right shows the cursor's line and column position within the file, the name of the current file (*DUMMY.DO*), and the amount of free memory (21,183 bytes). Why only 21,183 bytes free in a newly initialized 32K machine? The rest is reserved for the operating system and user dictionary.

Pressing any key clears the screen and homes the cursor, as it does whenever you create a file.

SETUP

Before going any further, it's time to invoke *SETUP*, which displays a window with three choices: *System*, *Telcom*, and *Printer*.

System is the first order of business, where you can modify the automatic power off interval, turn automatic spell checking on or off, and specify the battery type in use: alkaline or NiCd. Battery life seems to be about equal to that of the Model 100.


Pressing *Enter* or *Esc/Cncl* then returns you to your current (*DUMMY.DO*) file. You can deal with *Telcom* and *Printer* options later, but I'll describe them now.

Telcom lets you set communication parameters, such as baud rate (75-9600), parity, stop bits, etc. You can also specify any translation of incoming and outgoing carriage returns, choose ASCII or Xmodem file transfer protocol (the WP-2 has built-in Xmodem software), choose between RS-232 and external modem, set modem control and dialing strings for an external modem, and even build a log-on script to log onto a host service, such as CompuServe, automatically.

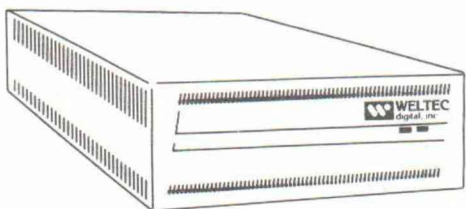
Printer has defaults for both Tandy and IBM printers. For both, you can change the codes for boldface, underline, and other (usually used for fonts) to match your particular printer. You can also add linefeeds to carriage returns if required. Note: the WP-2's parallel printer connector is a standard 25-pin female IBM type.

BACK TO DUMMY.DO

Back in *DUMMY.DO* again, text entry and editing feels much like working on the Model 100. The familiar *FIND*, *CUT*, *COPY*, and *PASTE* work just like their M100 counterparts. *PRINT*, like the M100's *SHIFT-PRINT*, prints an entire document. The WP-2 has no screen



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dump, however.

To my dismay, I discovered that *CTRL*-key combinations that simulated M100 function keys are ineffective on the WP-2. Farewell, "Wordstar diamond" and other shortcuts.

REPLACE performs a search-and-replace. After you specify a search string and the replacement string, the WP-2 finds each occurrence of the search string, letting you optionally replace it, skip it, or cancel the operation. You can also choose to replace all occurrences automatically without further prompting.

If there's a way to search for and replace carriage returns, line feeds, and other control characters, it's not mentioned in the manual, and I didn't find it.

INS/OVR toggles the WP-2 between insert and overtype mode, changing the cursor shape to indicate the current mode: full-height for insert, half-height for overtype.

STYLE lets you boldface, underline, or assign other attributes (usually a font) to selected sections of text, which are then indicated on the screen by a *B*, *U*, or *F* in reverse video before and after that section. When printed, the printer acts on these codes as you've instructed in *SETUP*'s *Printer* option.

FORMAT displays and lets you modify tab settings and line spacing for an

entire document. *HELP* displays your options here, should you forget them.

LAYOUT sets up the page layout for your printed document, which includes justification on or off, automatic page numbering, top, bottom, left, and right margins, line length, page length, and pause between pages while printing. You can also create a header and footer, one line each, and determine whether each is to be centered, left or right justified, or turned off.

I was unable to assign bolding, underlining or other features to headers and footers. There may be a way, but I haven't found it in the time I've had the WP-2.

SPELL CHECKING

SPELLWORD checks the spelling of an individual word under the cursor. The built-in spelling checker quickly indicates whether the word is spelled correctly, and if not, opens a window and presents a list of guessed words similar to what you typed, letting you scroll through them with the arrow keys. On finding the correct word, press *Enter* to close the window and substitute the correct word into your text automatically.

Using the *SETUP* function (explained earlier), you can opt for automatic spell checking, in which spelling is checked as you type. A misspelled or unfamiliar

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word causes a beep—nothing more—so you can either fix it on the spot or ignore it and continue typing.

SPELLDOC checks an entire document for misspelled or unfamiliar words. On finding one, it opens a window displaying five choices: *Correction*, *Add to dict*, *Skip*, *Edit*, and *CNCL cancel*, the first letter of each being the key that initiates that particular action. Pressing C invokes the *SPELLWORD* function, selecting and substituting the correct word from a list of possibles. A adds the word to the user dictionary (in reserved memory); thereafter, the spell checker recognizes the word and won't flag it. S simply skips over the word, making no changes. E lets you edit the word manually. And CNCL quits *SPELLDOC*, returning you to the normal text editing mode.

The spell checker has worked quickly and well in the short time I've been using it. It was entertaining, though, to discover that this thing doesn't recognize its own name, forcing me to add WP-2 to the user dictionary. Even more enjoyable was when it choked on *Wordprocessor*, a not-very-legitimate word proudly emblazoned on the WP-2's case, packaging, and documentation!

Ah, but not to worry—two keystrokes quickly stowed this new noun in my user dictionary, and I was ready to (er) "wordprocess" some more.

HARDWARE REVIEW

THESAURUS

Or perhaps I was ready to wordprocess "anew," or maybe "afresh." The *SYNONYM* function finds synonyms for the word under the cursor. It opens a window and displays the word, its type (noun, verb, adjective, etc.), and one line of synonyms at a time. Small graphic arrows indicate in which directions (right, left, up and down) you can scroll to see more synonyms. Where a word can be more than one part of speech, synonyms are presented for all its forms.

The order of presentation seems to be that each line of synonyms represents a different overall shade of meaning, the words on a given line being related within that context. As with *SPELLWORD*, when the desired word is selected, pressing *Enter* squirts it into the text in place of the original word.

There seem to be no synonyms for prepositions (nor, possibly, for other parts of speech), and you can't add your own to a thesaurus equivalent of the user dictionary. ROM and RAM space restrictions are probably the limiting factors here. Still, the designers seem to have done a good job, and *SYNONYM* has so far proven quite handy (i.e., convenient, practical, functional, utilitarian).

SYNONYM has so far proven quite handy (convenient, practical, functional, utilitarian).

CALENDAR

CALENDAR acts somewhat like a pop-up, in that you can invoke it from within a document without leaving the document. On exiting, you're returned to the the document.

Within *CALENDAR* you can create, sort, update, and store a list of events and special occasions. While it has columns for dates, times, and comments, it doesn't include an alarm function to alert you to upcoming events.

CALENDAR makes use of the *SORT* and *QUICK* functions. Nothing special about *SORT*: it just sorts the file. *QUICK* is a quick search function for rapidly locating a particular entry. When invoked, the

cursor moves to the beginning (the date column) of the first calendar entry. As you type a character, the cursor moves to the first occurrence of that character. As you type the second character, the cursor moves to the first occurrence matching both keystrokes. And so on. It quickly zeroes in on a desired string (in *CALENDAR*'s case, a date).

When first invoked, *CALENDAR* creates a file named *MYCAL.DO*. Except for its name, this is an ordinary text file, and all the normal text editing, formatting, printing, and other commands apply. The only big difference is that *CALENDAR* works only with a file named *MYCAL*. To use several separate calendar files, rename each one after creation. Then rename the one you wish to use as *MYCAL.DO* before using it.

If the WP-2 had a built-in clock/calendar, this could be handy for alerting you to upcoming appointments or events. As it is, however, *CALENDAR* is just a fancy text file—useful, but nothing to rave about, in my view.

PHONE

The *PHONE* function lets you create, sort, update, and store a list of phone numbers. It's very similar to *CALENDAR* in that it acts like a pop-up, uses *SORT* and *QUICK*, and creates and uses only one file name (*MYPHO.DO*), which like any text file can be edited, printed, etc. Again, you can have several lists, as long as you rename them.

Once you select an entry from your phone list, *DIAL* automatically dials it, provided an external modem is attached and you've made the proper settings in *SETUP*'s *Telcom* option.

FILE FORMATS

All the files discussed have been .DO files. When program software is developed, there will be program files (extension .PR, maybe?), and the *RUN* function (at the *FILES* menu) will run them. Meantime, it's ".DO City," with one exception, which I'll explain in a moment.

A document (.DO) file in the WP-2, as opposed to the Model 100, is not a straight ASCII file. Each document carries additional information about itself, such as page format and layout, and may contain style information (bold, underline, font) embedded within the text. Even the cursor position is stored. When you reopen a file, everything is just the way you left it. That's convenient. You don't have to specify those settings each time you edit or print the document.

So what if you want to transfer the file to another computer that can't use or

HARDWARE REVIEW

understand the extra embedded information? You convert it to straight ASCII. At the *FILES* menu, you place the cursor over the file name and press *F1-A*. After prompting you to be sure, the extra info is stripped, and the file is given a *.DA* extension (the exception I mentioned earlier). Now you can send it to the other machine.

However, you must be careful not to re-enter the file before transferring it. When you enter a file, it's checked for header info. If it has none, as in the case of a *.DA* file, it's given some, and the extension reverts to *.DO* again.

So after converting a file to ASCII, be sure you've selected a different file as the current one before leaving the *FILES* menu. That's because when you exit an application, like *FILES* or *TELCOM*, you drop back into the current text file. And dropping back into your *.DA* file would make it *.DO*, undoing your ASCII conversion.

Complicated? You bet! It's an idiosyncrasy of the WP-2 that just takes some getting used to.

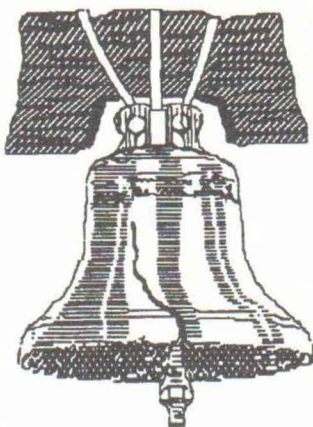
FILES

The *FILES* menu is the main control center for much of the WP-2. When the WP-2 is doing nothing else, it "parks" itself in the current document. From there you can invoke *FILES*. Across the top line of the *FILES* screen are the names of various devices: *MEMORY*, *RAM DISK*, *MEMORYCARD*, *DISKETTE*, and *TAPE*. One of these is highlighted in reverse video and the free space on that device is shown on the bottom right corner of the screen. Using the left and right arrow keys, you can select any device, press *Enter*, and you'll be shown the files on that device (except *TAPE*) and their sizes in bytes, in a column on the left side of the screen, and again, the free space on the device in the lower right corner. You can scroll up and down with the arrow keys to see any that don't fit on the screen.

This is where you select the current document file in memory. To open an existing document, highlight its name with the cursor and press *Enter*. The file is opened, and you're in text editing mode, having left the *FILES* menu.

To open a new file instead, press *F1-N* and assign a file name when prompted. To delete a file, press *F1-D* and answer *Y* to the *Are you sure?* prompt (you cannot delete the current file). And so on. A whole slew of accelerator keys is at your disposal (invoke *HELP* to see the list, if needed) for such things as *COPY*.

Saving and loading files in the WP-2 is called copying. You *COPY* a file from one device to another or to the same device. For example, you can *COPY* a file from



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diskette to memory (like a load) or from memory to diskette (like a save). Or to and from tape, RAM card, or other devices. You can duplicate a file in memory by copying it to memory under another name. There's even a command to copy all files from one device to another, a good way to back up all files in memory to disk or tape. In most cases when copying, if the destination file already exists, you're given the opportunity to overwrite it or abort.

There are "load" and "save" subfunctions. These are for saving and loading the user dictionary for the spell checker. You can save your user dictionary to a file (any name you like) or several files, and then load them in as desired. This could be handy.

A *SWAP* subfunction copies the current file to the current device and swaps in another from that device, making it the current file. (Not allowed with memory or tape, however.)

Two features not mentioned previously are common to all files. One of them is the *VIEW* subfunction, which lets you see the contents of any file without having to make it the current file so that you enter the text editor. This is handy, especially for examining a *.DA* file without its reverting to *.DO* status.

The other feature common to all files is *MERGE*, which merges an entire file into

the current document at the cursor position. At the *FILES* menu, highlight the file to be merged and press *F1-M*.

A comment about the paste buffer. Unlike on the Model 100, the paste buffer is a file, *TEMP.INV*, that can't be deleted like regular files. Instead, you perform the *COPY* function (*F1-O*) without selecting any text, and answer *Y* to the *Are you sure?* prompt. I discovered that you can rename it, effectively saving the cut or copied text as a file, but you can't rename it back to *TEMP.INV*, since the WP-2 automatically assigns a *.DO* extension.

STORAGE DEVICES

Lacking the 32K expansion RAM chip and the 32K card, I was unable to test either of these devices. I do have the CCR-81 cassette tape drive, and I can report that it works well. In fact, it works better with the WP-2 than it ever did with the Model 100. I haven't lost any data or had any I/O errors with it yet. (Hmmm ... maybe I just haven't given it enough of a workout?)

I also have the Portable Disk Drive 2 (200K format), and it also works very well with the WP-2. You need an adapter to match the PDD-2's 25-pin cable to the WP-2's 9-pin RS-232 port, so I picked one up from Radio Shack and discovered a minor problem. The WP-2's 9-pin port has hex nuts for fastening an adapter



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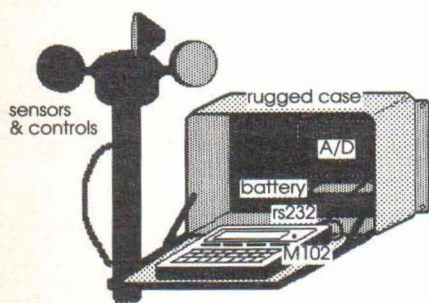
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HARDWARE REVIEW

snugly. Unfortunately, the Radio Shack adapter has them on the mating end as well. So the nuts bang together and won't let them connect. The solution would be to remove the nuts from the Radio Shack adapter, but since it uses a molded cable, I can't just unscrew them. If I force them out, they'll never go back in. My interim solution (since I don't own the cables) was to unscrew the nuts from the WP-2 instead. The RS-232 connector seems to be still solidly in place. (Later, I'll hack up my own cable.)

Once connected, the WP-2 handled the PDD-2 just fine. The only other "problem" encountered is that it only handles 40 files. The PDD-2 is designed with two directory banks, each holding 40 file names, for a total of 80 possible files. Apparently, the WP-2 doesn't take advantage of the second directory bank. So while you still have the full 200K of storage available for your files, you're limited to a maximum of 40 files per disk.

In all cases characters were lost.

TELCOM

Here's where I part company with this otherwise very nice machine. Over the past few days, I've found the WP-2's TELCOM capabilities to be marginal at best.

The problem is missing characters. I doubt I'm doing anything wrong; I've had enough experience in telecommunication. Perhaps I just got a flaky machine? Whatever the cause, it's unable to deal effectively with too much data coming in.

I communicated at various speeds by modem (Touchbase 1200 and 2400) with CompuServe and the Portable BBS, and by direct connection to a 1400 FD and a Datavue Spark.

In all cases characters were lost, most noticeably during screen scrolling. ASCII downloads fared better, but not much. Suspecting possible weirdness in the 1400 FD, I tried the Datavue Spark. Same results. (I was even using Radio Shack connecting cables.)

Next, I tried downloads via modem on the Portable BBS. The WP-2's ASCII download protocol is useless here: When told to send a file, the BBS immediately sends it. There's no way to enter the download mode on the WP-2 quickly enough to capture the data. If you enter it beforehand, you can't give the necessary

commands to the BBS.

Xmodem protocol worked reliably with the BBS's maximum rate of 1200 baud. Xmodem via the RS-232 directly to another computer gave mixed results. At baud rates of 2400 or less it seems reliable. At higher speeds, the transfer never gets going. A series of NAK's occurs, and the download aborts.

So for downloading files, at least, Xmodem works fine up to 2400 baud. For navigating a BBS, reading mail, or any activity that depends on data coming across the screen, and even for ASCII downloads, characters are going to be lost.

Unfortunately, I got the machine only a few days before deadline, so that's all I can report at the moment. I'll need more time to study the problem and pin down the cause.

I depend a great deal on TELCOM, and while I'm far from lazy, I sure hate doing things the hard way. With luck, I just got a flaky machine, and the others won't have this problem.

SUMMARY

While not a full-blown computer, the WP-2's ability to accept third-party software opens many possibilities if Tandy truly encourages developers. Already, its word processing (that's two words) power far outstrips the Model 100's TEXT program. Understandable documentation and built-in HELP menus make it easy to use.

In view of the WP-2's portability, expandability, good keyboard, built-in thesaurus, spell checking and formatting capabilities, its quick function key operation, and numerous other features, this could be an ideal tool for anyone who works much with text.

If we can fix the TELCOM problem, I'll keep it.

Manufacturer's Specifications

WP-2 Wordprocessor—\$349.95

(Now on sale for \$299.95)

AC Adapter—\$6.95

Internal 32K RAM Expansion—\$49.95

IC Card 32K RAM Expansion—\$119.95

Portable Disk Drive 2—\$219.95

CCR-81 Cassette Recorder—\$59.95

Touchbase 1200-bps Portable Modem—\$199.00

Touchbase 2400-bps Portable Modem—\$299.00

6-foot Serial Cable—\$17.95

6-foot Printer Cable—\$34.95

COMPATIBILITY: All PC compatibles

WELTEC's "Portable Hard Disk" Reviewed

You don't need a Master's degree, just a PHD (No B.S.!).

by Mike Nugent

Only one-fourth of the two million laptop computers in use (as of early 1988) have hard disk drives. We who use the remaining machines—a million and a half of us—have had to get by with floppies. And if we've each cursed, even just once, that smug little *Disk Full* message ... well, that's a lot of cursing! (Tsk! Tsk!)

Fortunately for our vocabularies, improving technology has put hard disks within our grasp—even on our laps—at affordable prices and in several forms, each with advantages and drawbacks.

One of the less expensive and more unusual paths to hard-disk-ness is the Portable Hard Disk (PHD) from WELTEC digital, inc. (their capitalization). Providing 20 megabytes of compact and portable hard disk storage, the PHD can operate on regular AC power or from its built-in rechargeable NiCd battery pack.

The 7.5-pound unit is solid looking, with physical dimensions (3.25 x 7.25 x 10.5 inches—height, width, length) somewhat smaller than I had expected. Its handsome appearance and small footprint make it right at home on an office desk, where its ivory color blends well with that of the Tandy 1400 computers.

A NEW APPROACH

What makes the PHD so unusual is that it works through the computer's RS-232 interface. Yup, the serial port! And therein lie some major advantages—and perhaps a drawback or two, depending on the user's individual needs.

The first advantage appears on opening the box: No special hardware! The PHD comes with only a serial cable, power adapter, boot disk, and manual. A carrying bag is optional.

Installation couldn't be easier. With the serial cable, connect the PHD to the computer, plug in the power adapter, turn on both machines, and boot up with the PHD boot disk. You now have a 20-

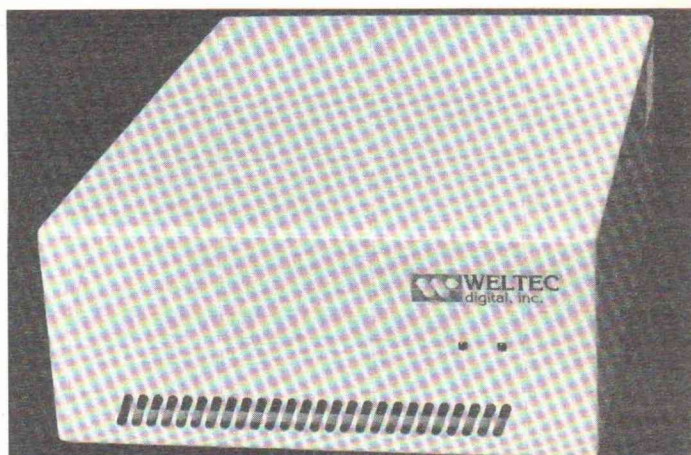
meg hard drive. It's that simple.

The PHD is controlled by `PHDDRV.SYS`, a small device driver installed at boot-up time out of the `CONFIG.SYS` file. To use it with your regular boot disk, copy `PHDDRV.SYS` onto your disk and add a `DEVICE = PHDDRV.SYS` statement to your `CONFIG.SYS` file. Whenever you boot your computer the PHD automatically comes on-line, using the COM1 serial port. To use COM2 instead, substitute `PHDCOM2.SYS` (included on the PHD boot disk) for `PHDDRV.SYS`.

This simple driver/serial-port arrangement is responsible for a major PHD advantage: It runs on any PC-compatible computer having a serial port (which includes every one I've ever seen). This means, for example, that I can take the PHD, containing programs and files created on my Tandy 1400, plug it into the office Tandy 4000, and go straight to work. Afterward, I just plug it back into my 1400 or any other computer I wish to use.

It's quick and easy. No copying of files to and from floppies. No worrying whether a machine has 5.25-inch or 3.5-inch drives. No hassling with the hardware, software, and setup of some *Whiz-Bang-Bridge-Link* program. The PHD provides instant plug-and-run capability on any convenient machine.

And your data stays with you. If it's sensitive info, you can easily take it home at night or lock it up for safekeeping. When traveling, if your destination has a



The Portable Hard Disk (PHD) from WELTEC. Twenty easy megs for any PC-compatible, connecting through the serial port.

PC-compatible, you can take just the PHD, and leave your computer behind. This incredible ease of data transportability is, in my view, one of the PHD's greatest assets.

"All peripherals that are currently being sold for use with laptop computers have a common deficiency—they all use the only expansion slot available in the laptop," says Dave Riley, Director of Marketing at WELTEC.

By using the serial port, the PHD leaves the slot free for other uses. That's worth considering. While the Tandy 1400 market, specifically, is hardly burdened with a glut of add-on boards at the moment, some have been developed and more are on the way.

EVALUATION

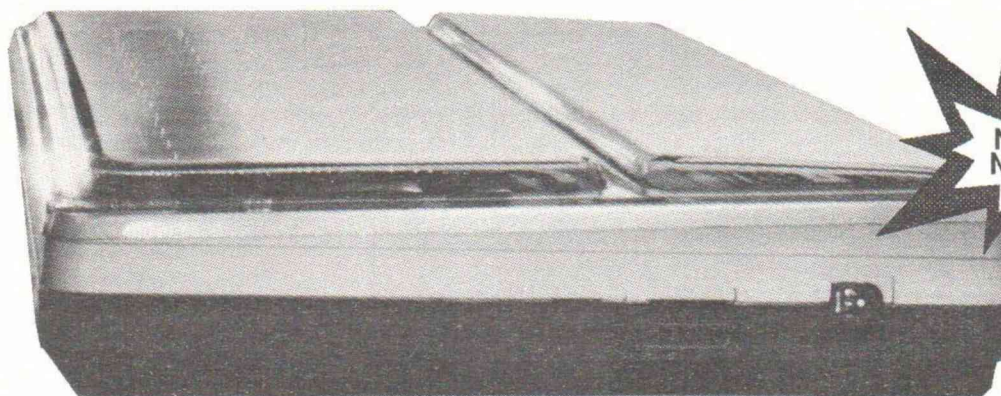
To evaluate its real-world performance, I copied all my files to the PHD and went about my daily business. I found it quiet and unobtrusive, enough so that after my initial curiosity waned, I'd often forget it was there on the desk. WELTEC's typically generous cable length allows placing the unit farther away,

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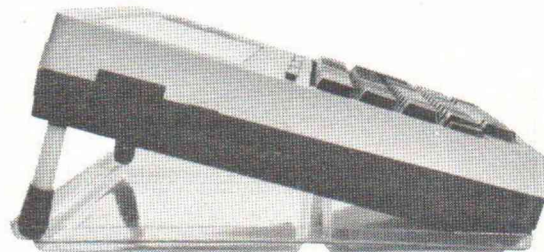
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HARDWARE REVIEW

even on the floor, where its presence would go virtually unnoticed, and precious desk space would be freed.

To this former floppy user, having a hard disk feels almost like having a new computer. With the proper *PATH* statement added to my *AUTOEXEC.BAT* file, the computer quickly and automatically locates programs and files on the PHD. It actually took me a while to get used to *not* swapping disks in and out of my drives. Now that I'm spoiled, I don't want to go back to floppies.

What about speed? Here's where I encountered a tradeoff. The same serial interface scheme responsible for PHD's amazing ease of use and flexibility also limits its speed. Though quite unscientific, my daily-use testing method left me with the impression that the PHD generally "feels" faster than floppies. WELTEC says it's as much as 50 percent faster. Bottom line: This veteran floppy swapper has no complaints.

Having gained a feel for the PHD over a few days' time, I was ready to try it on battery power. The batteries charge fully in eight hours, during which time you can still use the PHD. Battery life seems to be as advertised, approximately two hours on a full charge. Using the *PHDTIM.COM* utility provided on the PHD boot disk can extend that operating time considerably by shutting down the PHD after a user-specified interval during which no disk access has occurred. By setting the time-out interval to five minutes, I was able to operate the PHD on battery power for most of a day. When the battery becomes low, the PHD sounds a warning through the computer's speaker.

The first time you access the drive after timing out, it takes about twenty seconds to spin up and stabilize. This delay seems a small price to pay for the greatly increased operating time and is normally not a bother. At certain times when such delays could become annoying, for example, while running a disk-intensive program like *Microsoft Word*, I just disable the time-out. *PHDTIM.COM* lets the user enable, disable, or change the time-out interval at will. Even with no time-out, I've found the two-hour battery life quite sufficient for my purposes. And battery operation, for me at least, is the exception rather than the rule.

A second possible tradeoff: Since it uses the serial port, the PHD can't work concurrently with other serial devices, for example, a serial mouse. If you don't use a mouse, or if a mouse card is available for the expansion slot (I don't know), then that's no problem.

The Tandy 1400 has only one available

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serial port, the other being dedicated to the modem. You must run *LapDOS II*, therefore, from floppy disk. To do so, copy onto a floppy disk any files you wish to transfer, shut down the PHD, and reboot. With the PHD disconnected, *LapDOS II* has control of the serial port, and you can proceed normally. Afterward, reconnect the PHD, reboot, and then copy any desired files from the floppy back to the PHD.

The modem and PHD work together. Using *Telir*, a shareware communications program, to download data from a bulletin board system and save it directly to the PHD, I encountered one problem. While *Telir* writes to the disk, the modem loses some incoming characters. I believe this may be a problem with *Telir* or the computer, rather than with the PHD, but haven't yet had an opportunity to investigate further. Meanwhile, the easy solution is to download to floppy and copy the data to the PHD afterward.

DOCUMENTATION

Being so simple, the PHD needs little documentation. The preliminary manual provided with the unit contains eleven pages covering system requirements, installation, operation, utility software, troubleshooting, one-year warranty, customer service, and technical support. Returning the warranty card gets you the

updated manual.

SUMMARY

The tradeoffs are mainly slower speed and, depending on your needs, possible serial port conflicts. While lacking some advantages of internal hard drives, the PHD has its own advantages that internals can't match. Used in combination with an internal hard drive, you can even have the best of both worlds.

I've found the PHD to be especially versatile, easy to use, handsome and reliable. It leaves the expansion slot free, and its battery operation is a big plus. I believe it nicely meets the needs of many of those million and a half floppy swappers. And it will still be just as useful when they buy their next computers. Not a bad set of credentials!

Nuge has no Ph.D. degree, but he's brilliant nonetheless. For one thing, he knows that authors usually write their own bio's. Now you do, too!

Manufacturer's Specifications

Portable Hard Drive—\$1099

Weltec digital, inc.

Size: 3.25"x7.25"x10.5"

Weight: 7.5lbs

Power: 16VAC @ 1.1A, 10 NiCd batt.

Capacity: 21.4MB

Interface: Serial Port

FAST: Save Your .DO Quickly!

A convenient, easy, reliable way to save your .DO files to and from cassette tape in 1/3 the time.

by Terry Kepner

One of the major failings of the Tandy 100/102 and 200 series computers is the time wasting procedure they use to save document files to tape cassette. Not only is this slow (more than eight minutes for a 23K file), but because of a bug in the ROM routines it's possible to save a large file (over 20K in size) that cannot be read back into your laptop.

The problem isn't with the *SAVE* routines. For some unknown reason (and several "experts" have tried to determine why) during the loading routine it's possible for the CPU to become confused as to what it's doing. When this happens the load routine simply aborts the *LOAD* and returns control to the operator.

Adding insult to injury, not only don't you get the complete file, you don't get *any* of the file loaded. The *LOAD* routine just pretends that none of the data arrived. Even if it's only the last ten seconds of a ten minute *LOAD* that failed, you get nothing. Very frustrating.

Plus, it never seems to fail at the same place twice. One time your file will load 75 percent before aborting. The next pass through you'll get 90 percent. The next pass, only 70 percent. The only constant is that it always happens after you've loaded 20K or more of your file.

BASIC doesn't seem to have this problem. While it is still possible to have a bad *LOAD* (usually the fault of the cassette player), when the load fails you are left with as much of your program as has been loaded so far. Not good, but at least you get some of your data instead of none.

I ran afoul of this *SAVE* bug several times before I learned that the only solution was simply to not make any files larger than 15K in size.

Unfortunately, when I'm really cranking at the keyboard, I don't always re-

member to check my file size until, all of a sudden, the computer stops working as I run smack out of RAM. My only choice is to print out what I have so far, delete enough text so I can use cut and paste, and then move stuff 200 or 300 bytes at a time into a new file until I get the larger file below the 15K limit. Very time consuming, very frustrating. But not as bad as losing the entire file when I try to reload 20K+ from tape.

FAST makes the computer treat .DO files as BASIC files

FAST TO THE RESCUE

FAST was originally introduced and sold by Minsos back in the old days when *Portable 100* was published in Camden, Maine. Today, Mel Zwillenberg is selling it under license from Minsos.

The theory behind its operation is simple: the *SAVE"CAS:* command sends data to the cassette tape in discrete chunks of 256 bytes. Each chunk includes a simple checksum. To allow sufficient time during *LOAD"CAS:* for the computer to calculate the incoming checksum, the *SAVE"CAS:* routine pauses the cassette tape. Thus, after every 256-byte chunk, there is a blank spot on the tape as the motor slows down and stops. When the computer gives the command to the tape motor to start up again, there is an additional small amount of time wasted as the tape motor comes up to speed. In addition a short synchronization header of 128-bytes of 1's is written before the next chunk of data is sent (the header

gives the computer the opportunity to check the data timing so it can load the data properly).

You've probably noticed the periodic "clicks" you hear coming from the portable. That's the motor relay turning the cassette tape motor on and off between 256-byte chunks.

Well, that procedure is 60 percent a waste of time. The computer is more than fast enough to calculate the checksum between data chunks without stopping the cassette tape.

FAST fixes that situation by making the computer treat the .DO files as *BASIC* files, eliminating the motor on/off time and the header. The twofold result: reducing an eight minute save/load time to just 2.5 minutes, and almost eliminating the opportunity for bad loads on 20K+ files. As far as I'm concerned, the *FAST* system is well worth the price.

HOW IT WORKS

FAST is actually two programs: *SAVER.BA* and *LOADER.BA*. Together they require about 2.8K of your RAM. You can make them smaller by following the instructions in the documentation and end up needing only 2K for both. Your best procedure is to keep only *SAVER.BA* (860 bytes) in RAM, and load the *BASIC* program *LOADER.BA* only as you need it.

Both programs are saved in standard *BASIC* format. Loading them is simply a matter of putting the tape in the tape recorder, pressing *PLAY* and loading them. They are NOT copy-protected, so you can make backup copies for safety.

Using *SAVER.BA* is simple. If you are in a file and you want to save it, just press *F8*. At the main menu, place the cursor over the *SAVER.BA* filename and press *ENTER*. The program displays the first line of text from your file, the file's length,

and prompts you to either type the name you wish to give the file on tape, press **ENTER** to use the first six letters of the text as the filename, or press period (.) to backup all the text in memory (the filename used is the letter "B" with the month and date appended to it, i.e., B01/15 means backup of January 15th). Immediately after finishing the save, **SAVER.BA** gives you the options to either return to the main menu or to verify the save.

If you are at the main menu and you realize you want to save a file, first go into that file, then exit it. Now go into the **SAVER.BA** program and follow the instructions I just outlined.

That's all there is to it. You've just saved you file in one-third the time it would normally take.

VERIFYING AND LOADING

After saving a file (or a backup) to tape, you should always run the verify procedure. This is simple. Immediately after the save, rewind the tape, press **F8**, press **PLAY** on the tape recorder and let the computer verify the tape. If there are any problems, try it again (my first try failed—wrong volume setting).

Later, when you're ready to reload the

As far as I'm concerned, FAST is well worth the price.

file, you need to pull in **LOADER.BA**, if you don't already have it in memory. Loading is as easy as saving: Run the program and press **PLAY** on the tape recorder. **LOADER.BA** scans the tape and displays the name of the first file it finds (or you can type a name for it to search for). When a file is found (or when the specified file is found), **LOADER.BA** displays the length of the file and its name. You are prompted to either skip the file and look for another, or to load the file it found. If you want to load the file, you are further prompted for a name to use. You can opt for the default name, which is simply **TAPE.DO**.

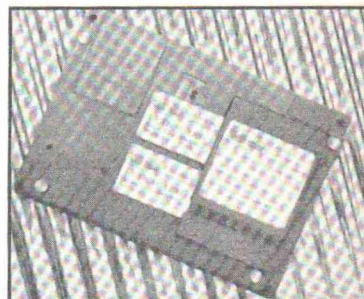
A special display appears during loading. There are several possibilities at this point. If the load is perfect, you return to the computer's main menu. If there is a checksum error, the program tells you so. You can view the bad text and decide to either keep it or try another load. A third possibility is that the tape will stop with-

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out the display changing, or that the tape will run to the end and stop. If the tape just stopped, apparently in the middle of a load, press **BREAK**, then **F7** to continue with the load. If it ran to the end, press **F8** to abort. Again you can view the file and decide to either keep it or try another load.

COLD-STARTS

Every Model 100/102 and 200 owner runs into the occasional "lock-up." Normally the only solution is to *cold start* your computer using the **CONTROL-BREAK-RESET** key combination, losing all your files. **FAST** provides a way to recover this data, if it is at all possible.

Use the **BASIC** command **CSAVEM** to save all of memory, in two chunks, to tape. Then use **LOADER.BA** to reload each chunk. Edit the reloaded data to throw out the junk, and you've saved the document files you thought were lost forever.

Very nice, very efficient, and you have copies on tape in case you goof up your recovery editing.

FILE MANAGER

Enclosed with **FAST** is a simple *File Manager* program. It simply automates renaming and killing files. Running the program lists your files on the display, with numbers added. The numbers help

you select the files you want killed or renamed.

SUMMARY

The documentation is sparse: five 8.5" x 11" pages folded to make a 5.5" x 8.5" booklet. It's not clean and sharp like a typeset book, but it's more than adequate to describe the programs and their operation. I rate both the documentation and the programs as excellent in content and application. If you use tape cassettes for data storage, you *NEED* these programs. At \$19.95 you can't afford to be without them (even if you pay yourself only \$5.00 an hour, it doesn't take many tape saves and loads, in 1/3 the normal time, to pay for the programs). Wish I had known about them several years ago.

Manufacturer's Specifications

FAST—\$19.95

Mel Zwillenberg
475 Richmond Avenue
Maplewood, NJ 07040

A tape utility that reduces save and load times by 66%.

Lock it in CAPS!

CAPS.BA makes your notebook computer display all uppercase letters on the screen and print all uppercase letters on the printer. The actual data in your files remains unchanged; only the the display and/or printout is made uppercase.

To use CAPS.BA, simply run it. The first time it's run, capitalization is turned on. Running it again turns capitalization off, restoring normal operation. (It's a toggle.)

CAPS.BA works by using two system hooks, one in the screen display routine, and the other in the printer output routine. Because certain other software may use these hooks, CAPS.BA plays it safe. If a hook is already in use by another program, CAPS.BA will not alter it, but instead will beep and print the message that no change was made to that hook. If the other hook is unused, it will still be modified.

Using CAPS.BA on the Tandy 200 and NEC 8201/8300 is just a matter of substituting the appropriate DATA values in line 130.

I developed CAPS.BA in response to efforts by Model 100 Forum members to help a fellow SIG member with a visual impairment. Thanks to all who contributed their time and brainpower, and I hope this program makes computer use a bit easier for some of our fellow lap-types. *Nugent*

```
10 'CAPS.100 (c) 1989 M.J. Nugent, Jr.
20 'Public domain. Distribute freely.
30 READ SCRN, PRTR, UL, UM, NL, NM, XL,
XM
40 DEV=SCRN:DEV$="screen":GOSUB 70
50 DEV=PRTR:DEV$="printer":GOSUB 70
60 MENU
70 LSB=PEEK(DEV):MSB=PEEK(DEV+1)
80 IF LSB=UL AND MSB=UM OR LSB=NL AND MS
B=NM THEN POKE DEV,LSB XOR XL:POKE DEV+1
,MSB XOR XM:RETURN
90 BEEP
100 PRINT "Cannot change ";DEV$;"--press
any key..."
110 IF INKEY$="" THEN 110
120 RETURN
130 DATA 64226, 64228, 233, 15, 243, 127
, 26, 112
140 '
150 'For other computers, replace line 1
30 data with the following:
160 'Tandy 200 use 62735, 62739, 20, 16
, 168, 156, 188, 140
170 'NEC 8201/8300 use 63956, 63960, 182
, 18, 219, 127, 109, 109
180 '
190 'If capitalization is not desired on
the screen, delete line 40. If not desi
red on the printer, delete line 50. If n
ot desired on either, what are you doing
with this program, anyway?
```

Listing 1. For situations where vision is limited, CAPS.BA converts all screen and/or printer output to upper case—without affecting the actual files.

CHAOS, 100 STYLE

A recent program on PBS discussed chaos theory. An example of a chaotic process that results in a semblance of order was given as follows:

Label the corners of an equilateral triangle (1,2), (3,4), (5,6). Start at any point (X1,Y1) on the triangle. Roll a die. If it comes up 4, for example, move to a point that is exactly half the distance from X1,Y1 to the corner (3,4) and place a dot there. This is the new X1,Y1. Roll the die again. If it comes up 2, for example, move exactly half the distance from the new X1,Y1 to the corner (1,2) and place a dot there. Continue this process.

It looks chaotic, but results in a surprising geometric pattern. CHAOS.BA (Listing 1) is a Model 100/102 program that satisfies the rules.

The probability of selecting a particular corner is 1/3. Line 10 satisfies this requirement. Lines 20-30 give a random start to the process by using the TIME\$ string. Lines 50-70 determine which corner of the triangle results from the "roll of the die." Line 80 calculates the new position X1,Y1 according to the half-way rule. Line 90 sets the pixel on the LCD.

This is an interesting waste of time.

Jim McBurnett
Greer, SC

```
10 CLS:L1=1/3:L2=2/3
20 J=VAL(RIGHT$(TIME$,2))
30 FOR I=1 TO J:N=RND(1):NEXT I
40 N=RND(1)
50 IF N<=L1 THEN X2=0:Y2=0:GOTO 80
60 IF N<=L2 THEN X2=60:Y2=60:GOTO 80
70 X2=120:Y2=0
80 X1=.5*(X1+X2):Y1=.5*(Y1+Y2)
90 PSET(X1,Y1):GOTO 40
```

Listing 1. CHAOS.BA demonstrates chaos theory, creating a surprising geometric pattern.

MULTI-COLUMN OUTPUT

Here is a tip for people with Write ROM (or Super ROM) who want multi-column output. I requires the user to swallow a little pride, because the procedure needs some manual intervention. This procedure is for two-column output, but the concept can be extended.

Each line of the final document should have these fields:

|_a_|_col1_|_b_|_col2_|_a_|

The letter *a* is the margin; *b* is the space between columns; and *col1* and *col2* are the widths of the columns. The sum of these values must equal the page width. Given an 80-character width, I could choose *a* equal to 5 and *b* equal to 6. To find the widths of the columns, subtract (2 * *a*) + *b* from 80 (i.e., 80 - 16 = 64). This value is to be used by two columns, so we divide 64 by 2, giving us 32.

Now go to the file that will become the first column. Make the first line be .OL *a*, where *a* is the value of the left margin (.OL 5).

On the next line, enter .OR *x*, where *x* is the sum of *a* and the column width (.OR 37).

Next go to the file used for the second column. Make the first

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line be .OL x , where x is the sum of a , column width, and b ($5+32+6=43$, so enter .OL 43). The second line of this file will then be .OR x , where x is the right margin of the page (75 in our example). As a check, this number should equal the number used in the above .OL command plus the column width ($43 + 32 = 75$).

All of this arithmetic will result in a layout like this:

```

|_5_|_32_|_5_|_32_|_5_|
^  ^ TEXT ^  ^ TEXT ^  ^
col. 1   5   37  43   75  80

```

Now we are ready to print. Align the paper in the printer carefully. Then print the file associated with the left column. Roll the paper back to the starting point again. Then print the second file. The result is two-column output.

Rick Sparber
Wheaton, IL

LETTERHEADS AND RULERS

In Bill Brandon's FULL POWER column for June 1989 he gives much help to readers wanting to produce documents by using TEXT in the Model 100. Among other procedures, he suggests storing a standard letterhead in the NOTE.DO file and using a ruler keyed into the top line as an aid to positioning the text on the page. For many years I have been using alternative methods for these two tasks that I believe will be found easier and quicker to use.

For letters, instead of using NOTE.DO, from which a letterhead would have to be transferred to a TEXT file each time of use, I have a letterhead laid out at the beginning of a file named

LETTER.DO. This file behaves as a sheet of headed stationery. A letter can be typed on it, errors corrected, two copies printed, then all text after "Dear" deleted by Select, CTRL-down arrow, and Cut, ready for the next letter. The deleted text is still stored in the paste buffer if it must be brought back. If, exceptionally, one letter has to be held available while a second is written, then a second sheet of headed notepaper can be made: Select the letterhead from LETTER.DO, Copy it, and Paste it to a new file, LETTR2.DO.

Instead of keying in a ruler on a line of the screen every time one is needed, I keep one permanently installed just beneath the LCD display, where it does not use up valuable space on the screen. Mine consists of a nine-inch length of "PRES-a-ply 1-line correction tape," as used by typists. This has been applied to the grey surface against the ridge immediately below the LCD. Then a series of numbers—1, 2, 3 ... 9, 10, 1, 2, 3 ... 20, 1, 2, 3 ... 40—have been inked onto it, each exactly below the location of each space on the bottom line of the screen. Type numbers there as a guide, but type only the single character 0 for the double characters 10, 20, 30, etc. As an aid to the eye, I also find it useful to underline the alternate decades: 10 to 9; and 30 to 9.

If, now, the "Yours sincerely," at the end of a letter 65 characters wide has to conclude at the sixty-fifth space, it can be moved to space number 25 following a blank line of 40 spaces.

This ruler has proved invaluable in laying out tables and similar uses, and in coping with word wrap—perhaps Bill Brandon will tell us later how to switch word wrap off? For some layouts, a second ruler applied at the top would have been useful.

Robert M. Organ
Bethesda, MD

Since your letter was written, Bill has, in fact, told readers about James Yi's TEXTE program, which turns word wrap on and off, allows appending text to the paste buffer, and other neat things. I believe TEXTE is currently available on both CompuServe and GENie.

-MN

Forum is where you can show off your expertise and help your fellow readers! Address your tips, hints, and techniques to: Portable 100, Forum Dept., P.O. Box 428, Peterborough, NH 03458-0428.

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The Tandy 1100 FD includes built-in DeskMate software.

Tandy Introduces 1100 FD

Tandy has released the Tandy 1100 FD, a laptop portable computer with DOS and DeskMate built in. The new clamshell-design laptop weighs 6.5 pounds and measures 12.1 x 2.4 x 9.8 inches.

The 1100 FD features MS-DOS 3.3, DeskMate Desktop, DeskMate's TEXT and 90,000-word spell-checker in ROM, 640K of available memory, one 3.5-inch 720K disk drive, low-battery indicator, battery-saving standby mode, built-in realtime clock, parallel printer port, serial communications port, a dedicated internal modem slot, and a full-sized 84-key keyboard. The display is an 80 x 25 high-contrast LCD measuring approximately nine inches (diagonally). The NEC V-20 microprocessor has a clock speed of 8MHz. The removable, rechargeable battery lasts for about five

hours (AC adapter/recharger included).

In addition to its built-in ROM features, the standard array of DeskMate applications, accessories, and utilities—Worksheet, Filer, Telecom, Calendar, Address Book, PC-Link and more—are included on floppy disks with the 1100 FD.

Options for the 1100 FD are a 2400 bps internal modem (catalog #25-3538, \$199.95), replacement battery (#25-3536, \$29.95), and a choice of carrying cases.

Retail price is \$999.00 (catalog #25-3530). For more information, contact your nearest Radio Shack Computer Center, Radio Shack store or participating dealer, or contact Radio Shack, Tandy Corporation, 1700 One Tandy Center, Fort Worth, TX 76102. Or circle #61 on your Reader Service Card.

Joystick for Laptops

Adtron Corp. has released *Top Flight*, a joystick interface for laptop computers. Top Flight uses the internal expansion slot to provide your computer with an IBM-standard game port. You can then plug in any standard 15-pin PC-compatible joystick. It employs low-power circuitry that is easy on batteries.

Top Flight comes in two versions: TF-T (For Toshiba laptops) and TF-R (Tandy 1400LT, GRiD 140XT). Price of either version is \$95.00. For more information, contact Adtron Corporation, 745 North Gilbert Road, Suite 124, MS 361, Gilbert, AZ 85234 (602)940-0060. Or circle #62 on your Reader Service Card.

32K RAM Fits in Your Tandy 100/102 or 200 Option ROM Space

EME Systems has released *ExtRAM*, a 32K memory expansion for the Tandy models 100, 102, and 200. ExtRAM fits into the Option ROM socket inside the expansion compartment on the back of the computer. It is all under cover and still 100 percent portable. Despite being located in the option ROM socket, ExtRAM is in fact RAM—read/write memory—so you can store and retrieve data there. It retains its data even with power off, because it is tied into the computer's backup battery. It draws less than one microamp of standby current, and its contents are immune to "cold starts" in the main RAM memory.

EME Systems provides utility programs for different types of applications for the ExtRAM. These include:

Bank switched memory. Software SLX, written by Paul Globman, gives your M100/102 two totally independent RAM banks, in effect doubling its memory capacity. Programs which could not otherwise co-exist can run without a hitch if they are stored in the separate banks, and switching takes less than two seconds. SLX options include (S)ave, (X)change, (L)oad, etc.

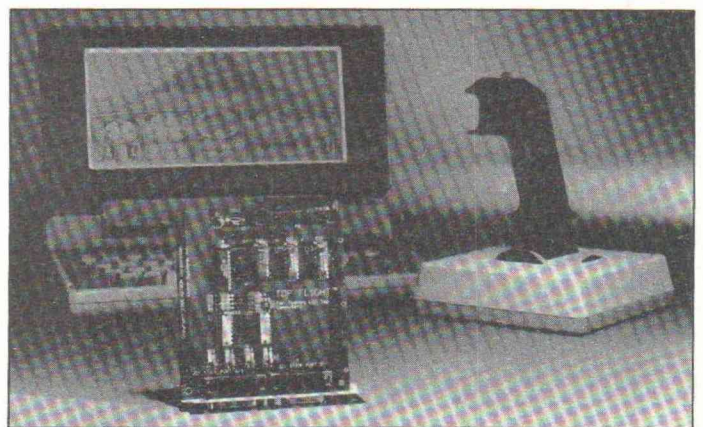
Program RAMdisk. ExtBAS, also written by Paul Globman, brings some of the functionality of his cross-bank XOS-C (Tandy

200) operating environment to the Model 100/102. Under ExtBAS, the user loads up ExtRAM (using SLX) with all the desired .BA and .CO programs, then brings them as needed into RAM to run them. Since the programs are stored in RAM only when they are running, space is freed—28K worth 4K programs needs only 4K RAM reserved to run them all.

Text RAMdisk. EME Systems provides ExtDO, a set of extensions to BASIC allowing more room to store burgeoning text (.DO) files. All but 512 bytes of the 32K in ExtRAM is available for storage.

ROM Emulator. Because ExtRAM resides in the option ROM space, it can hold programs that are designed specifically to run from there, just as if they had been burned into an EPROM instead. (This is designed to be compatible with the products of King Computer Services.) EME Systems provides ROMCOM utilities by Wilson Van Alst for saving the entire 32K option ROM space to the COM: port.

Price is \$75.00 (\$85.00 after January 31, 1990). CA residents add sales tax. For further information, contact EME Systems, 2018 Parker Street, Berkeley, CA 94704. Or circle #60 on your Reader Service Card.



Top Flight lets portables use IBM desktop-style joysticks.

Custom ROM Service from King

King Computer Services, Inc. is now offering a custom ROM service.

Originally, King sold only the cross development system, and a range of inexpensive EPROM burners. As demand grew, King added higher quality adapters and solderless adapters to their line, as well as socketed EPROMs and EPROM emulators.

Because many clients prefer to have the work done for them instead of attempting it themselves, King has now added this service to the list. All that is involved in get-

ting a program put on a ROM is to call King Computer Services. They will advise the client, convert the code, and produce a master. After testing to ensure that it is performing correctly, clients can either burn their own ROMs from the master or have King burn the quantities needed.

For more information contact King Computer Services, Inc., 1016 North New Hampshire, Los Angeles, CA 90029 (213)661-2063. Or circle #64 on your Reader Service Card.

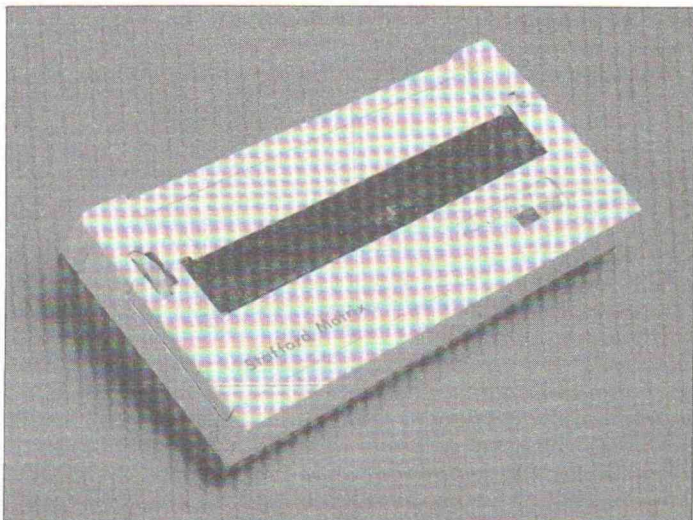
Stafford Matrix Portable Printer

The *Stafford Matrix Portable Printer*, from Stafford Computer Corporation, is a stand-alone printer designed for use with portable/laptop computers. The printer measures 13 x 6 x 2.6 inches and weighs 4.8 pounds with a full complement of batteries. It allows for the use of multi-part forms, and will print approximately 65 pages on a single NiCd battery.

The Stafford Matrix operates at a noise level of less than 60 DBA and prints at 100 cps in draft mode or 25 cps in NLQ mode. It has both IBM and Epson interface capabilities. When AC line power is available, the power converter unit will support unlimited use of

the Stafford Matrix while simultaneously recharging the battery. A full battery recharge cycle will occur within twelve hours even though the printer might also be in continuous operation.

The Stafford Matrix is a dot-matrix (9 x 9 in draft mode) impact printer, featuring a 96-character (ASCII) set and variable character pitch. Centronics parallel and RS-232 serial interfaces are standard, but IEEE 488 and Applewrite are options. Retail price is \$499.00. For more information, contact Stafford Computer Corporation, 1620 Locust Lane, Brownsburg, IN 46112 (317)852-5902. Or circle #65 on your Reader Service Card.



The Stafford Matrix is designed for use with portables/laptops.



The tiny Itron RP-42 printer is designed for durability and portability.

Printer Designed for Fieldwork

The *Itron RP-42*, from Itron, Inc., is a serial dot-matrix printer designed for extreme portability. It weighs 3.6 pounds (including battery pack and paper), and measures 7.6 x 5.7 x 3.1 inches. It is weather-resistant and has a rechargeable NiCd battery.

The RP-42 uses single-part roll paper or two- or three-part carbonless paper, printing up to 42 characters per line on three-inch wide paper. Thermal paper is not required. The friction-feed RP-42 prints two lines per second in the ASCII character set, 11 international fonts, or numerous graphics/character modes (in-

cluding condensed, enlarged, emphasized, and underlined). It prints horizontal, vertical (rotated 90 degrees) and inverted (rotated 180 degrees). It can also print bar codes.

The printer may be powered by the rechargeable battery pack or by optional AC battery charger, international wall chargers, or 12-volt DC vehicle adapter. Prices start at \$1300.00. For further information, contact Itron Inc., East 15616 Euclid Avenue, P.O. Box 15288, Spokane, WA 99215 (509)924-9900. Or circle #66 on your Reader Service Card.

Circuit Prototyping System

Adtron Corp. has a circuit prototyping system for use on Toshiba and Tandy (MS-DOS) laptops. *Laptop Prototyping Systems (LPS-T)* lets you build your own custom circuits. It comes with an applications guide to assist you in prototyping and performing limited manufacturing. The result is that you can take your breadboard design to a printed circuit board without guessing about electrical or mechanical specifications.

Fitting the internal expansion slot, the LPS-T is a completely bundled solution with all necessary and often hard-to-find bus connectors, metal brackets, and breadboarding, PCB included. A 5-volt power grid on the top and a ground grid on the bottom provide low-impedance power distribution

and also control signal noise and characteristic impedance. It accommodates DB25, DB15, DB9, RJ-11 and 40-pin DIP connectors.

Included with the system are mechanical and electrical specifications, an application guide with technical information, and both 8-bit and 16-bit internal bus interface connectors. Extender cards for the laptops are offered as options, as is a Scotch-3M breadboarding socket kit.

LPS-T is available for \$125.00. For more information, including pricing and availability on other laptop products and accessories, contact Adtron Corporation, 745 North Gilbert Road, Suite 124, MS 361, Gilbert, AZ 85234 (602)940-0060. Or circle #63 on your Reader Service Card.

COMPATIBILITY: Tandy 100/102, Tandy 200.

Portcomm, The Portable Communicator

A painless way to link your MS-DOS computer disk drives to your Model 100 or 200.

by Thomas L. Quindry

Just when I thought I didn't need anything else for my Model 100, along comes *Portcomm, The Portable Communicator*, distributed through Club 100: A Model 100 User Group.

The *Portable Communicator (Portcomm)*, written by Chris de Herrera, is one of the programs sponsored by the club. Its function is to offer you a painless way to link your MS-DOS computer disk drive for access from your Model 100 or 200 to save and load programs. *Portcomm* runs on the MS-DOS computer and causes it to emulate the Tandy Portable Disk Drive. You can use it with any of the Model 100/200 disk operating systems available, two of which are public domain.

To make it easy for you to use, Rich Hanson, the founder of Club 100 has provided a user-friendly disk package, which contains *Portcomm*, a shareware MS-DOS menu system, a public domain disk operating system called *Powr-DOS*, several text and information files, which tell you how to use the program and give information about Club 100, several good public domain programs for the Model 100, and a current catalog of the thirty-four disks of public domain programs from Club 100. All this for \$34.95 plus \$2.00 shipping and handling. You can specify either 5.25-inch or 3.5-inch MS-DOS disks. You need a null modem cable to connect your computers, and if you don't already have one, it costs you an extra \$12.50—quite a bargain for what you get. Be sure to specify whether your MS-DOS computer has a 9-pin or 25-pin RS-232C plug. *Powr-DOS*, by the way, used to be a commercial program and one of the better DOS's for the Model 100/200. It was later turned over to the public domain by the author and company when the company stopped selling it.

All the software I have described

above is available through the MS-DOS menuing system provided. The package has been set up to get you up and running instantly. All you have to know is how to spell "GO." The command GO brings up a menu with *Portcomm* as the first selection with instructions and other options for getting the public domain Tandy DOS onto your Model 100 or 200 ... painlessly.

Getting the DOS over to your Model 100 or 200 is the only time you have to do something other than push a button on the computer, though it is still quite

If you could start your laptop, you can easily reload your favorite DOS without much trouble..

simple. Using the Model 100 version as an example, connect your null modem cable to the Model 100, run *Portcomm* from the menu system, and turn on your Model 100. Go to BASIC, type LOAD "COM:98NIE", press ENTER, and then press the F4 key on your MS-DOS computer. This loads *Powr-DOS* into the Model 100. If you already have a DOS for your Model 100/200, you can skip this step, because *Portcomm* can use any DOS designed for the Portable Disk Drive. But even more important, one of the public

domain programs provided with the package lets you use the F4 command to create a program to load YOUR OWN DOS from the MS-DOS computer. And it will even set the date on your Model 100/200 in the process. Now, if you could start your laptop, you can easily reload your favorite DOS without much trouble.

All operations from this point are the same as if you are saving or loading programs to a Tandy Portable Disk Drive. You can save or load tokenized BASIC (.BA), text (.DO), and even machine-language (.CO) files. So you have the full range of file types available to your laptop. I find it much more convenient than using the Portable Disk Drive, since many more programs fit on my hard drive. They are instantly accessible with just a cable hookup.

While I really like the *Portable Communicator*, its ease of use, and the fail-safe method it provides, I have a some criticisms—all minor, except for one. First, the directory on *Portcomm* does not show you the MS-DOS subdirectories available. You have to remember them. Also, when changing directories, you must give the full path name and cannot use some of the shortcuts available with MS-DOS. Even though it can display up to sixty files, it will display only forty of them when using *TS-DOS* as the disk operating system. I have version 2.0 of *TS-DOS*; later versions, written for the newer Tandy 200K Disk Drive may not have this problem. With *Powr-DOS* (included with *Portcomm*), you get an error message if you try to display a directory of over forty files on your laptop.

Since the various disk operating systems can only "select" files with up to six character names and extensions with two characters, *Portcomm* cannot recognize files that don't meet these specifications.

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Therefore, the DOS on the Model 100/200 can't recognize ASCII files with extensions like .100 or .200. More seriously, the TS-DOS version that I have will freeze on the computer if you select one of these odd files. Pushing the reset button will then cold start your Model 100, thus losing all its programs. The solution to all this is simple: Rename those .100 or .200 ASCII files to the .DO extension, and have no more than forty files in a directory. You should keep only .BA, .DO, and .CO files in the directories to be used with *Portcomm*. You have no reason to have anything else there anyway.

Club 100 has done a superb job of packaging the program and support files.

SUMMARY

Club 100 is a user group dedicated to support Tandy Model 100/102/200 computer users both with access to public domain software and other useful information. Club 100 is not just a bulletin board service but instead a full-fledged application oriented support group. Club 100 is neither run for profit nor intended to be, but is run on a "break even" basis. In existence since 1983, it is by far the largest privately owned Model 100 resource available, with over 4,500 members at this time. So, if you are interested in public domain programs for your

Model 100/102/200, write Club 100 and get on their mailing list. Better yet, if you decide to buy the *Portable Communicator*, you'll get a full catalog of their services on disk, plus some public domain programs, with your order.

Club 100 has done a superb job of packaging the program and support files. You can run *Portcomm* either through the menu system provided or as a stand-alone program. Should you need to use the COM2 port or a monochrome screen with your MS-DOS computer, or change the transmission rate to 9,600 baud rather than the 19,200 baud default, a simple command does it. Using my version of TS-DOS, I have had to use the lower baud rate with my Tandy 1000A. But with my NEC Multispeed, I can use the higher baud rate. I was glad that *Portcomm* offers this flexibility.

All-in-all, *Portcomm* is a very fine program that is easy to use by anyone. I wholeheartedly recommend it. Whether you are a beginning computer user or a pro, you'll be up and running in just a few minutes with *Portcomm*.

Manufacturer's Specifications:

Portcomm, The Portable Communicator—\$34.95+\$2.00s/h

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Get the Most from TEXT

(Part 3B of 3 Parts)

by Bill Brandon

Editor's Note: If you were tuned in to us last month, you know that we didn't have enough room to run both the text and the program listing

given to us by Bill for his column. Herein is the fully commented listing he sent us.

```

1  ' LISTXT.BA
2  '
3  ' Copyright 1989, W. R. Brandon, 53
4  Via Corona, Mesquite TX 75150
4  ' CompuServe ID# 71316,516
5  '
6  ' Formats listing of .DO files to L
CD or to printer. You must have
7  ' two files named HEADER.DO and FOO
TER.DO present in RAM when you
8  ' run this program; they should con
tain what their names imply, but
9  ' they can contain as little as a s
ingle CR.
10 '
11 ' As shown here, LISTXT will take a
ny .DO file and send it to LCD or
12 ' printer, adding left, right, top
and bottom margins and providing
13 ' page breaks and page numbering. O
ther features may be added later.
14 ' The purpose of the LCD display is
to let you see how the file will
15 ' print out, and let you more easil
y hyphenate words and adjust sen-
16 ' tences to make more attractive pa
ge breaks. You can embed your us-
17 ' ual printer command characters; t
hese won't show up on the LCD, of
18 ' course.
19 '
20 ' As usual, you will want to remove
all the REMarks and spaces to save
21 ' your RAM for golden prose. Howeve
r, you MUST leave lines 1, 3, and 4
22 ' intact. The other REMarks are her
e mostly to help those who may want
23 ' to study this program's operation
and so improve their own BASIC
24 ' techniques (doubtless by avoiding
the clumsy code herein!).
25 '
26 ' GENERAL PLAN OF THE PROGRAM
27 ' -----
28 '

```

```

29 ' Declare files and variables
30 ' Initialize variables
31 ' Open file for input (i.e., the on
e to be printed)
32 ' Choose device for output and open
it (i.e., pick LCD or Printer)
33 ' Main Loop
34 '   Control pagination for LCD
35 '   Control pagination for Printer
36 '   Inner Loop
37 '     Check for EOF
38 '     Get character from input file
39 '     Is it a Carriage Return?
40 '       If so, print margin, line b
uffer, and Line Feed; exit inner loop
41 '       If not, add the character t
o the line buffer to be printed
42 '       Is it a space within the hot
zone: (line width-4 to line width +3)?
43 '       If so, jump out of the inne
r loop
44 '       If not, increment the inner
loop index, go get another character
45 '       Exit inner loop when a space ap
pears in the hot zone
46 '       Print a string of spaces to set
up the left margin
47 '       Check line buffer and strip unw
anted line feeds
48 '       Print line buffer
49 '       Print line feed
50 '       Adjust variables
51 '       Go back to top of main loop
52 '       EOF found - Repeat?
53 '       If so, close files, go back t
o initialization of variables
54 '       If not, close files and go to
MENU
55 '       Handle LCD pagination
56 '       Handle headers, footers, pagina
tion
57 '
58 '
59 '
60 '

```

Continued.

Continued.

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Circle 158 on reader service card.

```

200 ' Declare files and variables
210 MAXFILES = 3
220 DEFINT A-Z
230 CLEAR 1000
300 ' Initialize variables
310 PW = 85 : LM = 10 : RM = 10 : LW =
PW - (LM + RM)
311 ' These are set up for 10-pitch fon
ts, with one-inch side margins on
312 ' 8.5 X 11.0 inch paper. LW is "lin
e width": 65 spaces. If you are
313 ' going to use a 12-pitch character
, you will need to change to:
314 ' PW = 102 : LM = 12 : RM = 12 : LW
= PW - (LM + RM)
315 '
320 PL = 66 : NL = 54 : CR$ = CHR$(10)
: TM = 5 : BTM = 6
321 ' PL is page length - 66 lines tota
l for 11-inch paper at 6 lines/inch
322 ' NL is the number of lines of prin
ting (other than the header and
323 ' footer) which will appear on each
page.
324 ' TM and BTM are the top and bottom
margins, respectively. Change these
325 ' as you wish, but remember that TM
+BTM+NL must ALWAYS = PL-1
326 ' CHR$(10) gives nice reliable spac
ing on Tandy printers, and probably
327 ' on others as well. If it doesn't
work on yours, try changing CR$ to
328 ' CHR$(13) or even CHR$(13)+CHR$(10)
. Or change the printer dip switch.
329 '
330 HD$ = "HEADER.DO" : FT$ = "FOOTER.D
O"
331 ' These, of course, are the header
and footer files. One line each.
332 '
340 PN = 1 : LN = 1 : LC = 1 : LS = 1
341 ' PN is the page number. If you are
going to print several files that must

```

Continued.

```

342 ' appear as sequentially numbered s
egments, manually change this to the
343 ' correct starting number for each
segment just before you print. LN and
344 ' LC are line counting indices; you
probably won't need to monkey with
345 ' them at all. LS is the line spaci
ng. If you want a double-spaced docu-
346 ' ment which maintains the one-inch
top and bottom margins with headers
347 ' and footers, change this to 2.
348 '
350 LM$ = STRING$(LM, " ")
351 ' This sets the left margin to be w
hatever you chose in line 310
352 '
360 CLS ' Clearing the deck for action!
370 '
390 ' Open file for input (i.e., the on
e to be printed)
410 FILES : LINE INPUT ".DO file to pri
nt? "; FN$
420 OPEN FN$ FOR INPUT AS 1
490 '
500 ' Choose device for output and open
it (i.e., pick LCD or Printer)
510 CLS : BEEP
520 PRINT@ 0, "Print to: " : PRINT@ 50,
"<1> LCD" : PRINT@ 90, "<2> Printer"
530 LINE INPUT "Enter Number: "; PT$ :
CLS
540 IF PT$ = "1" THEN OPEN "LCD:" FOR O
UTPUT AS 2 ELSE IF PT$ = "2" THEN OPEN "
LPT:" FOR OUTPUT AS 2 ELSE GOTO 510
580 '
590 ' Main Loop
600 ' Control pagination for LCD
610 IF (LC = 4) AND (PT$ = "1") THEN
GOTO 1610 : IF LC>3 THEN LC = 1
690 '
700 ' Control pagination for Printer
710 IF (PN = 1) AND (LN = 1) THEN PRI
NT #2, STRING$(TM, CR$); ELSE GOTO 810

```

Continued.


```

720 LN = TM : GOTO 910
730 ' Lines 710 and 720 set up the top of the first page.
740 '
810 IF (LN = (TM + NL)) AND (PN > 0) THEN GOTO 1910
820 ' Line 810 determines whether we are at a page break; if so, it's off
830 ' to the footer and header routines.
890 '
910 L$ = "" : IF EOF(1) THEN GOTO 1510
920 ' Line 910 prevents double printing and checks for an empty file
980 '
990 ' Inner Loop: Builds one line at a time for display
1000 FOR I = 1 TO LW
1010 IF EOF(1) THEN GOTO 1310 ' Check to be sure we haven't run out of file
1020 A$ = INPUT$(1,1) ' Get character from file
1030 IF A$ = CHR$(13) THEN GOTO 1040 ELSE GOTO 1110 ' Is it a CR?
1040 I = LW ' If it is, we're done with this line of output
1050 PRINT #2, LM$; ' Setting up the left margin
1060 PRINT #2, L$; ' Printing the line of output
1070 PRINT #2, STRING$(LS,CR$) ' Line feed (allows easy double-spacing)
1080 LC = LC + 1 : LN = LN + (2*LS) : IF LN = (TM + NL) THEN GOTO 1910 ELSE GOTO 610 ' Keeps line counters accurate and checks for page break
1110 L$ = L$ + A$ ' Add to line buffer
1120 IF I < (LW-4) GOTO 1210 ' Are we in the hot zone?
1130 IF A$ = " " GOTO 1160 ' If we're in zone and this is a space, stop
1140 OV = OV + 1 ' Keeping track of position in the zone
1150 IF OV < (LW+3) GOTO 1010 ' Keep adding chars in the zone
1160 OV = 0 : I = LW ' Found a space in the zone, so we can stop
1210 NEXT I ' End of the inner loop
1310 IF L$ > "" THEN PRINT #2, LM$; ' Filling the left margin with spaces
1320 IF ASC(L$) = 10 THEN L$ = RIGHT$(L$, (LEN(L$)-1)) ' Get rid of unwanted Line Feeds at start of print buffer
1330 PRINT #2, L$
1340 LC = LC + 1 : LN = LN + LS ' Updating the line counters
1350 PN = PN + (LN \ 66) ' Updating the page number
1410 GOTO 610 ' Go back to top of main loop
1490 '
1500 ' EOF found - Repeat?

```

```

1510 CLOSE : LINE INPUT "Again? (Y/N) "; AG$
1520 AG = INSTR(1,"yY",AG$): CLOSE
1530 IF AG THEN 210
1540 MENU
1580 '
1590 ' Handle LCD pagination
1610 PRINT@ 280, CHR$(27) + "p Press any key to continue ..." + CHR$(27) + "q";
1620 C$ = INKEY$
1630 IF C$ = "" THEN GOTO 1620
1640 PRINT@ 280, CHR$(27) + "K";
1650 PRINT@ 280, " ";
1660 LC = 1 : GOTO 610
1680 '
1690 ' Handle headers, footers, pagination
1710 PRINT #2, STRING$(2,CR$); : A$ = ""
1720 OPEN HD$ FOR INPUT AS 3 ' Opening HEADER.D0
1730 LINE INPUT #3, A$
1740 A = INSTR(A$,"#") ' Looking to see if there's a page number in the header
1750 IF A THEN 1760 ELSE 1800
1760 AF$ = LEFT$(A$, (A-1)) ' Take the page number and sign out and ...
1770 AF$ = AF$ + STR$(PN) : IF LEN(AF$) = LEN(A$) THEN GOTO 1790 ' put the page number in
1780 AR$ = RIGHT$(A$, ((LEN(A$)-LEN(AF$)+1)))
1790 A$ = AF$ + AR$ ' Putting the header back together again
1800 PRINT #2, LM$A$
1810 A$ = "" : AF$ = "" : AR$ = "" : A = 0 : CLOSE #3 ' Cleaning up
1820 PRINT #2, STRING$((TM-3),CR$); : LN = TM ' Space down to first line
1830 GOTO 910
1910 PRINT #2, STRING$(2,CR$); : A$ = ""
1920 OPEN FT$ FOR INPUT AS 3 ' Opening FOOTER.D0; same process as 1720-1820
1930 LINE INPUT #3, A$
1940 A = INSTR(A$,"#")
1950 IF A THEN 1960 ELSE 2000
1960 AF$ = LEFT$(A$, (A-1))
1970 AF$ = AF$ + STR$(PN) : IF LEN(AF$) = LEN(A$) THEN GOTO 1990
1980 AR$ = RIGHT$(A$, ((LEN(A$)-LEN(AF$)+1)))
1990 A$ = AF$ + AR$
2000 PRINT #2, LM$A$
2010 A$ = "" : AF$ = "" : AR$ = "" : A = 0 : CLOSE #3
2020 PRINT #2, STRING$((BTM-3),CR$) : PN = PN + 1
2030 LN = 1 : IF PT$ = "2" THEN GOTO 2040 ELSE GOTO 1710
2040 CLS: BEEP
2050 PRINT@ 80, "Insert another sheet - Press any key";
2060 C$ = INKEY$
2070 IF C$ = "" THEN GOTO 2060
2080 CLS : GOTO 1710

```

Continued.

End of listing.

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April: Reviews of Sord IS-11, Sharp PC-1350, *DISK+*, *T-BASE*, and Roadrunner; *Free Software: Textpro*, Technology Transfer Damming the PICO Pipeline to Russia.

May: Review of DG1, Which Spreadsheet Should you Buy? Servicing Picos, LCD Screens in Color, Federal Express.

June: Reviews of *Tandy 200*, *2.2 Companion*, and *T-Backup*, *M100 File Transfer*; Wrangler improves the Odds with Sharp PC-5000s, Dow Jones News/Retrieval On-line Database, *Courtroom M100's*.

August: Reviews of Datavue 25 and *Touchbase Modem*; QuickTrip Convenience Stores More Efficient, Tracing Tribal Roots and Translating the Bible in Jungles of Papua New Guinea.

September: Reviews of HP Portable Plus, *WriteROM*, *ThinWrite 80 Portable Printer*, A Flat Mac, *M100 Meets Challenges at Woods Hole Oceanographic Institute*.

October: Reviews of Kaypro 2000, *T-View 80*; Computerized Fire Department, Stretching the limits of Telephone and Computer, *BASIC translation Tactics*.

November: Reviews of Bondwell 2, NEC 8027A Printer, CQ Haste; *PICO Formatter*, Search and Rescue Via Computers, Industry Views from an HP Exec.

December: Close Look at Ericsson Portable and *TMPC (time management software)*, Travel Tips, Tricks for Traveling, *Dialer Program*, *Project management with the M100*.

1986

January: Reviews of Gridcase 2, Access, Word-Finder, and Prospecting, CP/M and MS-DOS, *Security Program*, Can Universities Cope with Picos? News from Comdex, *Jazz up your LCD*.

February: Reviews of ZP-150, and LeScript Word Processing; *Stevie Wonder Inspires Stardom in M100*, Can Universities Meet Expectations of Computer-literate Students? *Cold-Start recovery*,

Personalized Form Letters.

March: Reviews of Panasonic Exec.Partner, Lync 5.0, and *Hardwire*; University Rethinks its Tasks, Picos in Medicine, *Auxiliary Battery Packs Spell Independence*, *More Muscle for the M100*.

May: Reviews of Toshiba T1100, IBM PC Convertible, Casion FX-7000G Calculator, SG-10 Printer; *MIKEY*, *Appointment Manager*, and *FAST*, IRS Crowns Zenith's Z-171, Handhelds in Restaurants.

June: Reviews of Zenith Z-171, *LapCoder*, *Super-ROM*, *LAPDOS*, and *BlackJack*; Go Shopping at PC in Rochester, NY, OM10 RAM Map (pt 1), A Tale of Two City Councils.

July: Reviews of Bondwell, ROM2, Letterjet HS-80, and Sidestar; Electronic Cottage, Taking Stock of Investment databases II, NEC 8201A's LCD, OM10 RAM Map (pt 2)..

August: NH's Governor discusses Laptops, PC-7000 from Sharp, Choosing your test-oriented Database manager, *Model 100/200's Lend a hand to Job Seekers*, NEC-8201A's Communication Connection.

October: Reviews of Toshiba 1100+, New Word, *Diconix Printers*, Fortune 500 Picos, Interview with DG Exec's, Desktop publishing with Picos.

November: Picos in Libraries, *Clever M100 Combinations*, *Exploring TPDD Part I*, Reviews of Data-computer 2.0, *TPDD*, *TS-DOS*.

December: Picos on Wall Street, Connecting to On-line Databases, Telephone Problems, *TPDD Part II*, Reviews of *Cleuseau*, *French/German Tutor 3*, *Pocketsize Modems*; 1986 Article Index.

1987

January: Book Publishing With a Pico, *Framework in a Pico*, Review of Right-Writer, JK Lasser's Money Manager, HP+Enhanced, Electric Webster, *Disk Power*, Pico's Computer Buyer Guide.

February: *Poor Man's Idea Processor*, Macintosh-Pico Connection, *M100 Cursor key alteration*, Handhelds: HP-18C, Langenscheidt 8000, TI-74, Reviews of Sord IS11-C, *Lets Play Monopoly*, *\$100 letter quality printer*.

April: Browsing the Boards, Writers & Portables, KTI products, Badminton & NEC, Reviews of *Inside the M100*, *TTXPress Printer*, *PCSG Business Analyst*, *Datapad 84 Zoomracks* & ECFS.

May: Doctors with Portables, *Text to printer*, Hitting the Board **OUT** of PC Convertible Add-ons, Holiday Best, Twist & Shout, *M100 memory Expansion*.

June: Lawyers & Laptops, *Personal Management System*, *M100/Mainframe Terminal Prog.*, Re-

views of Wang Portable, *Search*, *Sprint* and *Super-calculator*, *Best of Compuserve book*, Chess-to-go.

July: Programming in the Portable Environment, Sysop interview, Talking portables (pt1), Portable Computer Buyer Guide, Reviews of *TS-Random*, *Software Carosel*, *Popcorn & the Hyperion*.

August: NEC 8201A takes Laptops in Movie filming, Talking Port **OUT** Reviews of Casio FX-8000G, Tandy 1400LT, and *System 100*.

September: *English Teachers use Laptops*, *Picos in Class*, *Document templates*, *Picos in the Oil Patch*, Reviews of HP ColorPro, and the Sportster 1200 modem.

November: *Control That Printer*, *Academia & Laptops*, Laptops on Capital Hill, Starlet Secrets, Reviews of Psion II, *DVORAK keyboard*, & Spark.

December: Global Laptops, Starlet Software, Toronto Blue Jays & GRiD, *NiCd Notes*, Review of IMC LCD-286, 1987 Article Index.

1988

January: Portable Computer Cellular Communication, Laptop Roundtable, Pico Portable Guide, Reviews Telemagic, Direc-Tree Plus, SchwabLine, Quotrek.

February: TenniStat, Flexibility of Form, T200 and T16. Reviews Eclipse, T1100 Hard Drive.

May: Handhelds Fight Crime, A Pico in China, Compaq Port. III, Datavue Snap, Fax hits the Road, HP Portable Vectra, T1400LT, Three Pocket Modems, Close-Up's Customer & Support.

June: Multispeed in the Tropics, *Monitoring Alkaline Batteries*, PSION and Mass Storage, Datavue Spark, Smith Corona Portable Word Processor.

July: Toshiba on the Road, *Diskette Ratings*, *Metered NiCd Manager*, Procomm on the NEC, WordPerfect 4.2 on the T1000, Sales Ally.

September: Laptops & the Learning Disabled, WordPerfect 5.0, Dynamac EL, HP-71B, WordPerfect Executive, Webster's New World Writer II.

October: Portables at Sea, Macintosh Navigating, Piloting and Celestial Progs, NEC-8300, Compaq Port. 386, File Transfer, Golden Parachute.

November: European EMAIL, New Tricks for your Cassette Recorder, Pico Pillows, Amstrad PPC-640, Selecting the President, Sales Power, Sales Strategy, Office Writer goes Light.

December: FASTECH, Automating Your Sales Force, AI, ScriptWriter, LiteDrive, Homeword Plus, VP-Expert.